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Western Australia: Gibbs, Bright & Co., Perth.

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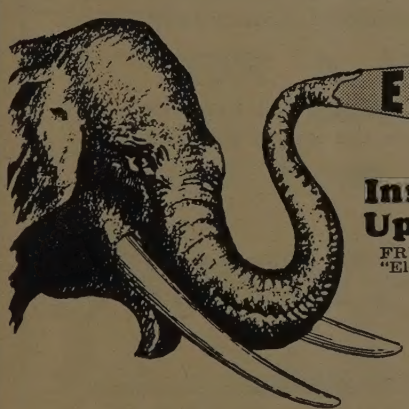

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Extract "BETTER FRUIT," U.S.A., February, 1934:

"Idaho Spray Programme for Codlin Moth Control, 1934," by Dr. Claude Wakeland, Department of Entomology, University of Idaho.

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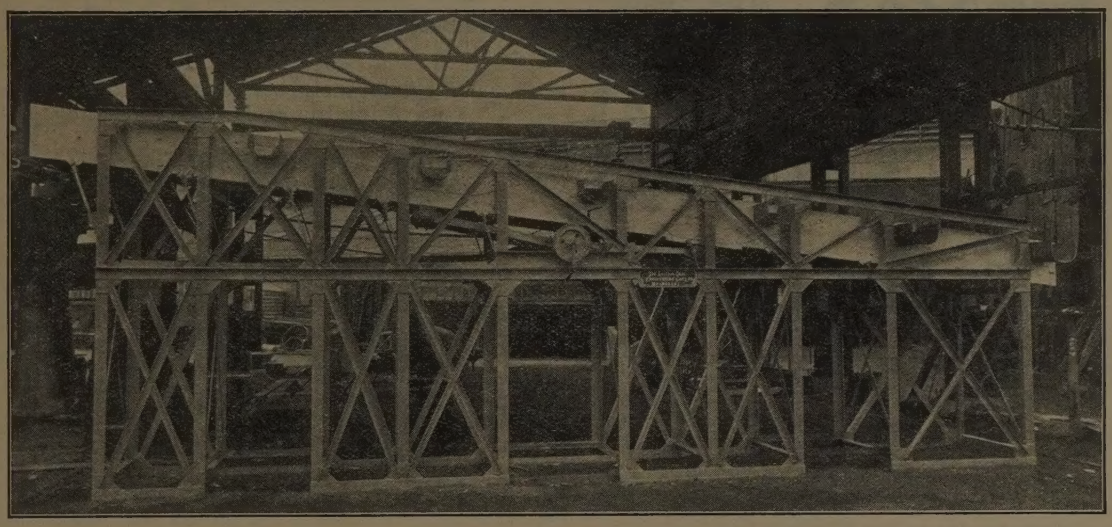

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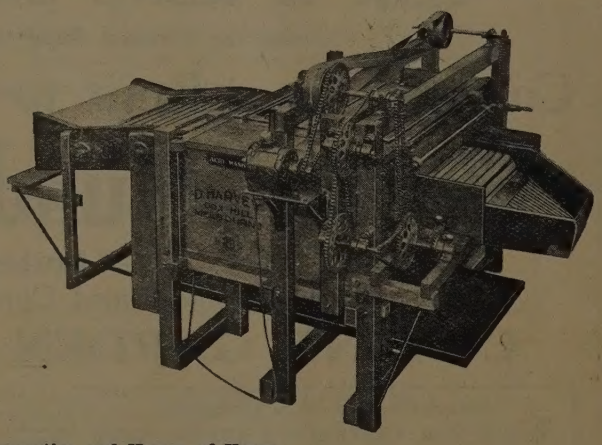

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Safest Spraying Oil

The intense refining process to which NEPTUNE WHITE SPRAYING OIL is subjected, whilst imparting the correct rate of volatility that ensures a continuity of toxic film for a very long period, and the right viscosity that permits of easy spraying, entirely eliminates the harmful elements found in ordinary spraying oils.

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NEPTUNE
WHITE **SPRAYING OIL**

THE SCIENCE CONGRESS which formed part of the Centenary activities of Melbourne during January, has done untold good in focussing public attention on the tremendous part which science now plays in every phase of life.

The Melbourne University was thronged with eager scientists from all parts of Australia, all rendering some definite service to the community. The range of subjects included geology, biology, education, sociology, commerce and statistics, meteorology, plant life, forestry, and a host of others.

The discussions awakened much interest among the public, which is all to the good, as there is now a much better understanding as to what science is doing and the necessity for continued research work.

Those engaged in fruit production certainly hope that one of the results will be the loosening of the national purse-strings for scientific research work into fruit cultural problems. We need much more exact information regarding manures, control of black spot on Apples, root stocks, control of Oriental Peach moth, the behaviour of fruits in cool store, etc.

In particular, experimental orchards are needed. Goulburn Valley growers have long urged the necessity for an experimental orchard in that important fruit-producing section of Victoria. Other important sections also need similar facilities.

Good work is being done in many directions, and appreciation is not lacking for these services. Nevertheless, we must take the long view, think in big terms, and stand firm for adequate measures to be of the best service possible to the important Australian fruit industry, which is a national asset.

HENRY FORD LIVES ON FRUIT.
An Athlete at 71.

Although 71 years of age, Henry Ford, the motor car magnate of America, looks as though he were in the prime of life. His eyes and skin are clear, and he moves like an athlete.

He believes in right diet,—lives principally on fruit, fresh vegetables and Orange juice. His favorite exercise is dancing.

GLUT OF PLUMS.

As most of the jam factories ceased the buying of Plums in January, many orchardists face serious loss. On the Mornington Peninsula (Vic.), export Plums were picked but other varieties were allowed to fall to the ground.

* * *

THERE SEEMS TO BE something wrong when large crops of beautiful Plums are allowed to fall to the ground to rot, as was the case this season. It is not possible for producers and manufacturers to get closer together, well in advance of the season to decide on a marketing policy? The present way of doing things seems very haphazard. If, for instance, it was known in advance that factories wanted only limited supplies, other methods might have been devised for using the fruit.

We have not yet developed the pure fruit drink trade, the use of fruit in ice cream and ice blocks. Science could come to our aid as regards by-products. The impulse for improved conditions, however, will need to come from the growers.

TIGHTENING EXPORT REGULATIONS.

THE FEDERAL GOVERNMENT has in mind the tightening of the export regulations.

A weakness was discovered last season when it was found impossible to remove from a ship in Australian waters a consignment of Oranges which it was known had deteriorated.

To secure continuity of business the regular delivery of high-quality goods is essential.

Apart from greater powers of inspection and detention of goods in Australia, the Government may seek to prevent the sale in England of produce which has seriously deteriorated en route. This would mean co-ordination with the British Government. In the meantime, the Commonwealth could deal with any produce which are the subject of a bounty or subsidy by providing that no subsidy be paid unless the goods were passed for sale by Commonwealth officers in London.

TRADE AND COMMERCE.

At the annual conference of the Chambers of Commerce of Australia, resolutions were carried opposing restrictions and control by legislation as being harmful to the free flow of trade. Also, as regards embargoes, it was decided to request the Government not to impose such unless a committee of business men be first consulted, because of interstate and international reactions.

NEWS IN BRIEF.

Tasmania's average Apple crop is 4,500,000 bushels. The 1935 crop is estimated at 3,600,000 bushels.

The Tasmanian Pear crop is reckoned at 90 per cent. of normal, or a total of some 270,000 bushels.

The article in this issue by Dr. S. A. Trout on the cool storage of Williams Pears is of commercial importance to the industry.

The commonly accepted theory that Grapes, Oranges and non-starch fruits will not ripen off the vine or tree has been exploded. Certain conditions as to maturity and temperature for ripening, however, are necessary.

It is one thing to keep Pears in cool store long in good condition, and another thing to market this fruit in good condition. The marketable cool storage life is less than two-thirds of the length of time the fruit will remain in cool store in sound condition. Scientific experiments have proved that the correct temperature for ripening Williams and most other Pears is 65 deg. F., either directly off the tree or after cool storage.

EXPORT REGULATIONS GAZETTED.

The export grading regulations, as decided by the Australian Apple and Pear Export Council, have been officially gazetted.

Details were published in the December "Fruit World" and in the "Fruit World Annual."

One of the objectives of the Victoria Mark Company is to have Apples, Pears, Peaches, etc., sold by count, not by weight. It is a bigger matter than most growers realise.

There will be strict inspection this season regarding arsenical residue. Fruit showing spray residue will be instantly rejected. One affected case will be sufficient for the rejection of the consignment.

A new regulation this year makes the use of seasoned timber for cases compulsory.

For Pear export this season protective material must be supplied on sides of case, as well as top and bottom.

Apples also must be protected from bruising by the use of strawboard or protective material. These are regulations. and will be enforced.

In an article on nut culture, Mr. E. E. Pescott states that the Queensland Nut—Macadamia—can be grown freely in Victoria.

A soft shelled Macadamia has been developed in New South Wales.

PERSONAL.

Mr. B. F. Thorpe, a Californian Citrus grower and a member of the California Fruit Exchange, was the guest of the Apex Club at Mildura in mid-January.

* * *

Mr. A. E. Hyland, London, Director of Australian Trade Publicity, is now in Australia for a brief visit. Mr. Hyland will make contact with the industries which contribute to the trade publicity funds.

Valuable work on behalf of Australian Apple and Pears is being performed by Mr. Hyland and his staff. Mr. Hyland is assured of a cordial welcome from Australian fruit producers.

* * *

Mr. E. J. Mulvany, ex-Secretary, Department of Markets, was recently tendered a complimentary luncheon at Menzies' Hotel on the occasion of his retirement by effluxion of time. The large attendance represented all sections of business, finance and industry. Many congratulatory speeches were made, to which Mr. Mulvany ably responded. Among those present from the fruit industry were Messrs. J. B. Mills, G. W. Brown, J. M. Ward, J. W. Bailey, H. G. Colombie and R. E. Boardman.

* * *

Mr. Geoffrey W. Brown, president Victorian Fruit Marketing Association, who represented Australia at the recent Empire Producers' Conference in London, visited Tasmania at the end of January to address growers regarding the Empire aspects of the fruit industry.

Mr. Brown travelled both ways by aeroplane.

NEW APPOINTMENT TO VICTORIAN AGRICULTURAL DEPARTMENT.

Mr. D. G. Quinn Joins Staff.

MR. DOUGLAS G. QUINN (son of Mr. Geo. Quinn, the well-known horticulturist of the South Australian Department) has recently joined the staff of the Horticultural Division of the Victorian Department of Agriculture as Special Horticultural Instructor.

Mr. Quinn obtained the Diploma of the Roseworthy (S.A.) Agricultural College, where he studied agriculture and horticulture. He specialised on viticulture, and for a period of years was Viticulturist at the college.

As opportunity offered whilst Mr. Quinn was at the war, he took advantage, whilst in France to study the wine industry in that country. He will specialise on viticulture in the Victorian Department, and there is every probability that he will succeed the present well-known Viticulturist, Mr. F. de Castella, who was due to retire some three years ago, but his services have been retained by the department until July next.

Mr. Quinn should be an acquisition to Victoria.

Mr. W. B. D. Jarman, fruitgrower, of Red Hill, Victoria, a director of the Victoria Mark Fruit Co. Ltd., has just returned from a visit to Tasmania. Mr. Jarman noted the substantial crops in Tasmania, particularly in the Huon districts, which he visited. Mr. Tyson's orchard at Geeveston, seems to hold the record for Apple production, 2,000 cases per acre.

* * *

Major H. Dakin, of Sydney, representative in Australia for Geo. Monro Ltd., fruit importers, London, is leaving for a visit to England at the end of March. Major Dakin is going home in connection with Geo. Monro Ltd. business: he will take the opportunty of inspecting shipments of Australian Apples and Pears.

* * *

Congratulations to Mr. S. Fish, M.Ag. Sc., of the Plant Research Laboratory, Burnley, Vic., on his appointment as Government Biologist. Mr. Fish is a capable scientist and administrator, and has won the confidence of producers and his fellow officers.

BLIND INVENTOR'S LOSS.

E. C. Brickhill's Valuable Patterns Burnt.

Sympathy will be felt for Mr. E. C. Brickhill, the blind inventor, in the loss by fire of his workshop containing valuable wooden patterns, also sprinklers and sprayers for orchards. The fire occurred on the night of January 29 in the workshop at the rear of his home in Queens-parade, North Fitzroy. The patterns had been designed to demonstrate overhead spraying of Citrus groves in Palestine and Italy. The loss is estimated at around £2,000.

Mr. Brickhill was planning to leave in a few weeks for a visit abroad to place his patent sprayers in the old world.

OBITUARY.

The death occurred at Ermington (N.S.W.) on January 20, of Mrs. Elizabeth Spurway, wife of Mr. Fred Spurway, a well-known Citrus nurseryman. The deceased lady, who was 68 years of age, is survived by her husband and ten children. Mrs. Spurway had been for many years an earnest worker in the cause of the Baptist Church.

General regret will be felt in the passing of Mr. Henry Clarke Pannifex, of Queens-road, Melbourne, on February 1. The late Mr. Pannifex was well known and widely esteemed in horticultural circles: he was the agent in Victoria for the well-known "Volck" sprays and other products in that group. He leaves a widow and one son.

GLUT OF PEACHES.

Are Marketing Methods Out of Date?

THIS SEASON there was a heavy glut of Peaches on the Melbourne market. Prices were very low—even 2/- per bushel, yet sales were slow, and at times impossible even at this figure.

Are our marketing methods out of date?

The general public wants ripe Peaches, but can't get them because the fruit is supplied mostly in paper bags, and if ripe a messy catastrophe is the result. Peach stains are extremely difficult to remove.

Who wants hard Peaches? Who buys Peaches to keep on pantry shelves for days in the hope of their ripening?

Then, again, Peaches are still sold by the lb.! Was there ever a more ridiculous system? What are our growers and distributors thinking of? How long is the farce to continue?

1. Peaches should be sold by count, not by weight.

2. Cardboard cartons should be used, not flimsy paper bags.

3. Those who have tasted the new pure fruit drink made entirely from fresh Peaches prophecy a big demand, and say that this drink will do as much for Peach growers as the Orange drink business has done for Orange growers.

All the same, we'd like to see the Peach growers getting fierce to improve matters along these lines.

Dried Fruits Control Board.

Growers' Representatives Elected.

It is announced by the Department of Commerce that the biennial election of growers' representatives on the Commonwealth Dried Fruits Control Board closed in Sydney at 4 p.m. on January 24, and that the following candidates were elected:—

Victoria—Peter Malloch and Arthur Leslie Johnstone. S. Aust.—Herbert Douglas Howie. N.S.W.—Lachlan McLeod (returned unopposed). W. Aust.—Alfred Yeates (returned unopposed).

The successful candidates will hold office for a period of two years as from February 6, 1935.

REDUCTION OF BOUNTY ON PEACHES, PEARS AND APRICOTS.

Owing to the increased prices for canned fruits in London there will be a general reduction in the Federal export bounty on Australian canned Peaches, Pears and Apricots for export to London this season.

Pear Black Spot Controlled.

Co-operative Effort Between Southern Victorian Fruit Growers' Association and Department of Agriculture Yields Satisfactory Results.

Value of Research Work Demonstrated.

Experiments to be Continued to Find Control Measures for Black Spot on Apples.

THE PRAISEWORTHY EFFORTS of the Southern (Victoria) Fruit growers' Association, in co-operation with the Department of Agriculture, to control black spot of Pears have resulted in a highly satisfactory manner.

The Dept. of Agriculture quickly put on some expert officers to attend to this very important research work when the growers demonstrated their earnestness by sharing the cost. In particular, it was necessary to raise funds to compensate the owner of the orchard (Mr. A. O. Leber, Doncaster).

Mr. S. Fish, M.Ag.Sc. (who has just been appointed Victorian Government Biologist, and Dr. Callan (Imperial Chemical Industries Ltd.)

There was a large attendance at Mr. Leber's orchard on January 17 to observe the results of the spraying experiments. The president of the Southern Fruitgrowers' Association, Mr. W. A. Thiele, introduced Mr. S. Fish, M.Ag.Sc., Government Biologist, who, in company with Mr. F. J. Greatorex (Orchard Supervisor), Mr. Leber and his staff, had attended to the experimental work.

Mr. Fish stated that about
200 Pear trees
had been used in the course of his inquiries, which had been conducted on the four principal varieties, viz., **Williams Bon Chretien, Packham's Triumph, Beurre Bosc and Winter Nelis.** The first two years had been devoted to the finding of the best control in the pre-blossom stage, and it had been discovered that two sprayings with Bordeaux mixture were the most effective at this stage. Last year had been occupied investigating the most suitable cover spray—i.e., a spray applied after the fruit had set. Various mixtures had been used, such as half-strength Bordeaux, 4 = 4 = 80 Bordeaux, self-boiled lime sulphur, colloidal sulphur, and a copper soda compound. The results ranged from 98-99 per cent. of clean fruit to as low as 20 per cent. clean fruit. Half-strength Bordeaux mixture, applied three weeks after the fruit had set, gave the best results, but unfortunately, this mixture caused some russeting.

The source of the spores for the primary or spring infection, continued Mr. Fish, was from the old, decayed leaves on the ground, which were infected in the previous season. The amount
of summer spot
which developed depended on the amount of primary spot or spring spot present and hence established an answer to the question as to the source of the summer spot.

Entirely satisfactory results had been achieved, concluded Mr. Fish, with two pre-blossom Bordeaux spraying 6-4-40, followed by one half-strength Bordeaux as a cover spray three weeks after the fruit had set.

The two pre-blossom sprays were applied as follows:—(1) as the young folded leaves were just protruding from the unopened blossom bud; (2) as the young folded leaves had separated from the unopened blossom bud. The cover spray was Bordeaux 6.4.80.

In the orchard the trees were divided into sections, the experiments being replicated six times.

At the foot of each tree was a tablet, on which was painted the spray programme and the results in clean or spotty fruit.

Trees having only the two pre-blossom sprayings of Bordeaux showed black spot averaging about 40 per cent.: in adjoining rows, trees having these two pre-blossom sprays plus the cover spray of half-strength Bordeaux, were either clean or had only 2 per cent. of spot. Control trees unsprayed had 100 per cent. spot.

The value of this enterprise is seen in the fact that growers who adopted the recommended spray programme have clean crops: those who varied it have spotty fruit.

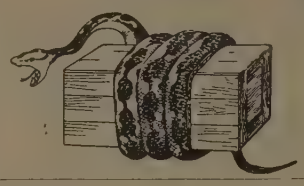
By replicating their tests six times, and getting uniformly good results on all varieties, the Department felt safe in issuing an authoritative statement recommending the spray programme above described.

Among those present, in addition to local growers, were Dr. Callan (Imperial Chemical Industries), and growers from Gippsland and other parts of the State.

On assembling after the demonstration, Mr. W. A. Webb, Doncaster, moved a hearty vote of thanks to Mr. Leber for providing his orchard for these vitally important experiments and to the Department of Agriculture for their ap-

Some of the Growers present at Doncaster Field Day (Mrs. A. O. Leber in centre of picture).

PYTHON



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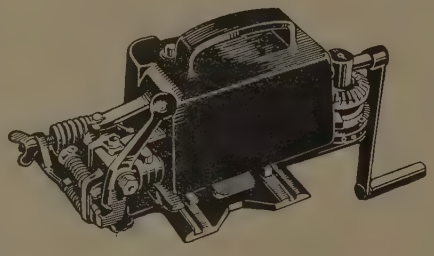

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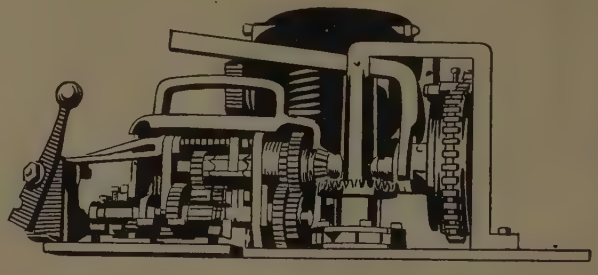

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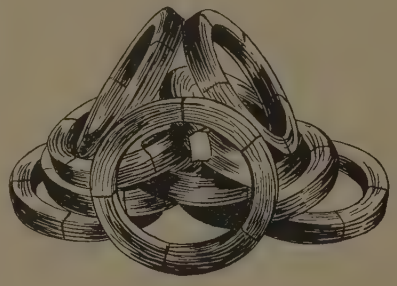

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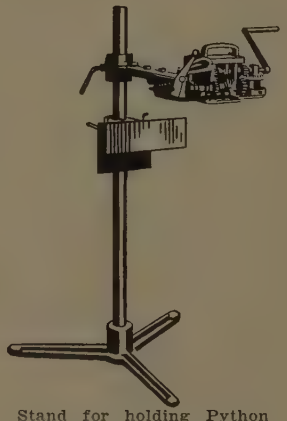

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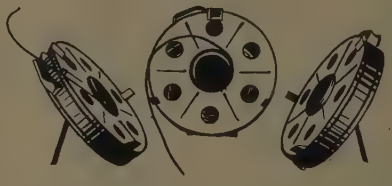

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Discussing Pear tree spraying. Some of those in this picture include Messrs. G. Mock, R. Webb, G. C. Karnaghan and W. A. Webb.

preciated services. Mr. A. O. Leber was unavoidably absent, but Mrs. Leber was asked to convey to him the thanks and good will of the assembled company.

In seconding, Mr. J. W. Bailey (Narre Warren) said that these experiments were of more than local interest, the benefit was State wide. He heartily congratulated all who had had a share in the work.

Mr. W. A. Thiele said a special word of appreciation was due to the Commonwealth Bank for substantial financial aid from their Rural Industries Development Fund. The bank was giving £1 for every £1 raised.

Continuing, Mr. Thiele said that whereas they had come to the end of the present year's test, it was necessary to continue the work to discover

(1) A cover spray which would be effective and yet not russet the fruit, and

(2) a remedy for black spot on Apples.

He appealed to all to give generously to this valued work.

Answers to Correspondents

Wilson's Wonder Walnut: "R.D.," Blenheim, New Zealand, writes:—Are there any records regarding the yield of Wilson's Wonder Walnut each year from planting?

Answer (by L. J. Wicks, Highbury East, Sth. Aust.). — I have many records of exceptional yields of individual Wilson's trees. A correspondent who planted a Wilson's tree in his suburban garden two years ago recently stated—"The first year after planting the tree yielded nine magnificent nuts, and this year it has over ninety." I have records of trees yielding eighty pounds of dried nuts in the eleventh year, which shows what can be done under the best conditions.

* * *

Control of White Louse. "J.S.J.," Turramurra, N.S.W., writes seeking information with regard to controlling white louse on his Lemon tree.

Answer (by N.S.W. Dept. of Agriculture).—This common scale (Chionaspis citri) can be destroyed by fumigation with hydrocyanic acid gas, or by spraying with lime sulphur. Lime sulphur, to be effective, must be used at full winter strength, as for deciduous trees when dormant. This spray can be applied to the main trunk and limbs without sufficient spray getting on the foliage to cause harm. Best results are likely to be obtained by spraying in April or May, when the larvae are abundant, and before twig infestation becomes heavy.

Later, when the scale has infested the twigs carrying the foliage, it is impossible to spray thoroughly without running risk of damage to the foliage by the spray. Hence, careful watch should be kept for this pest, and the trees treated before the lice get beyond the main limbs. Where this is the case, fumigation should be resorted to.

* * *

"S.T.C.," Amiens, Queensland, writes:—I notice quite a lot of my Plum trees, some of which were grafted on to Peach stocks three years ago—Burbank, Narrabeen, Wilson—have very badly perforated foliage. The Apricots are the same, but the Apricots (fruit) are badly spotted, like spots of rust or callouses, partially eaten into the fruit. What is the cause of this, and what are the methods of control?

Answer (by the Assistant Pathologist, Queensland Department of Agriculture. —Re Plum and Apricot diseases. These two fruits are subject in the Amiens district to shot hole, which produces symptoms corresponding with those described by you. The disease can be caused by a number of fungi, and is readily controllable by orchard sanitation and spraying. After the prunings have been gathered and burned, all fallen leaves, etc., should be ploughed under. Any portions missed by the plough should be turned over with the spade. The trees should then be sprayed with Bordeaux mixture 6.4.40 at bud burst. This should be followed after fruits have set with lime sulphur 1:50 in the case of Plums, and Bordeaux 2.3.40 in the case of Apricots.

Federal Fertiliser Subsidy

THE Minister for Commerce (Rt. Hon. Earle Page) stated that the forms of application for the subsidy on artificial manure had been despatched to the majority of post offices in all States.

Under the Financial Relief Act, 1934, the subsidy is payable at the rate of 15/- per ton on artificial manure actually used during the period July 1, 1934, to June 30, 1935, on the production of all primary produce other than wheat. This includes artificial manure used for the improvement of pastures.

Under the Act, "artificial manure" means—

> "Any substance which contains nitrogen, phosphoric acid or potash, and which has been manufactured, produced or prepared in any manner for the purpose of fertilising the soil or supplying nutriment to plants."

It does not include any animal or vegetable matter which has not been subjected to process or manufacture; or agricultural lime or other soil amendment or any product prepared primarily for supplying lime to the soil.

If producers are unable to obtain the forms at their local post offices, they may procure same on application to the officer-in-charge of the Fertiliser Section in the Capital City. The addresses of these officers are:—

New South Wales — Department of Commerce, Commonwealth Bank Building, Pitt-street, Sydney.

Victoria — Department of Commerce, 318 Post Office Place, Melbourne.

Queensland — Department of Commerce, Box 778 L, G.P.O., Brisbane.

South Australia—C/o Mr. S. Lillywhite, P.M.G. Department G.P.O., Adelaide.

Western Australia — C/o Mr. B. C. Hagerty, P.M.G. Department G.P.O., Perth.

Tasmania—C/o Collector of Customs, Hobart.

After completing all the particulars required from them, applicants should send the forms to the supplier of the fertiliser. When the certificate of supplier has been completed, the supplier will presumably transmit the claim to the Department at the address previously mentioned for payment.

Insect Pest Control

THE VALUE OF SPREADERS :: SIZE OF PARTICLES IN LEAD ARSENATE :: ROTENONE AS AN INSECTICIDE :: IMPORTANCE OF WHITE OILS.

(By R. T. M. Pescott, Vict. Government Entomologist.)

SPREADERS ARE OF VALUE when added to spray compounds to combat orchard insect pests, states Mr. R. T. M. Pescott, M.Ag.Sc., Victorian Government Entomologist. Spreaders are added to insecticides to secure a better coverage, also to enable the liquids to make intimate and complete contact with the insect against which it is to act. Spreaders include soap, saponin, casein derivatives and gelatine.

The dusting with insecticides has become established in market gardens.

Dusting with a hand blower (note the Y attachment to cover two rows).

Arsenical Spraying.

One phase of arsenical spraying is referred to as follows by Mr. Pescott in the Journal of Agriculture.

Particle Size.—While this factor has received very little attention up to the present time from investigators or manufacturers, some countries are now claiming that size of particle is most important in determining the toxicity of an arsenate. The argument put forward in favor of this is that the amount of poison that can be taken into the stomach of an insect by way of the mouth, and the ability of the arsenate to adhere to fruit and foliage, depend on the fineness of the particles. In New Zealand the mouth parts of a large number of newly emerged larvae of the leaf roller moth were measured and were found to range from 75 to 100 microns in diameter (1 micron is approximately 1/25,000 of an inch). However, these insects were found to be capable of ejecting minute particles of the poison with a diameter of 10 microns. It has been assumed arbitrarily in New Zealand that 10 microns is the effective maximum for particle size, and on this assumption a possible explanation for the conflicting results secured in the toxicity study with different arsenates has been put forward. To illustrate this point, Table I. shows the analyses of several brands of arsenates at present on the market in New Zealand.

This factor of particle size possibly may be utilised as some measure of the relative efficacy (other particulars being equal) of the different commercial arsenates, but further work is necessary before any definite statement can be made on the matter.

Table I.—Sizes of Particles of Arsenates.

ms. = microns.

Particle Size in Microns.	Sample of Lead Arsenate. A. %	B. %	C. %	D. %	E. %
Above 74 ms.	0.1	2.1	4.3	1.1	0.1
Between 74 and 10 ms. . . .	0.0	27.0	1.0	13.0	1.0
Total above 10 microns .	0.1	29.1	5.3	14.1	1.1
Between 10 and 5 microns .	0.3	21.0	7.0	16.0	4.0
Under 5 ms. .	99.6	49.9	87.7	69.9	94.9

New Insecticide—Retonone.

Recent advances in chemical research have indicated the value of rotenone as an insecticide. Among the natives of the Malay Archipelago and other tropical areas the roots of certain plants are commonly used for fish poisons. The commonest of these plants appears to be Derris (Derris elliptica), a member of the family Leguminosae. In 1848 it was discovered that the ground-up roots of this plant possessed a very definite insecticidal value, and since that time great strides have been made in the use of this product. The active principle from an insecticidal point of view, is a chemical compound known as rotenone, which is supposed to approximate to the formula $C_{19}H_{16}O_6$. One of the main disadvantages of the use of Derris roots as an insecticide is that the rotenone content of samples of roots from different localities varies very considerably. For example, it has been shown that, in America, the rotenone content of commercial Derris roots may vary from nil to 5.5 per cent., with a total ether extract ranging from 5 to 23 per cent.

As an insecticide Derris is capable of acting as both a contact and stomach poison. As a contact insecticide, it is of approximately the same order as nicotine sulphate. As a stomach poison it is claimed to possess properties equally

Table II.—Codlin Moth Experiments.

Spray Programmes.	Codlin Moth Infestation. 1930-31.	1932-33.	1933-34.	Arsenic Residue at Picking Time in Grains of As_2O_3 per lb. of Fruit. 1930-31.	1932-33.	1933-34.
	% Infection.			Grains Per lb.	Grains Per lb.	Grains Per lb
(1) Arsenate of lead sprays alone ..	16.7	7.3	65.9	0.032	0.039	0.025
(2) Arsenate of lead calyx spray followed by white oil cover sprays ,, ,, ...	6.3	4.3	47.7	0.003	0.006	0.003

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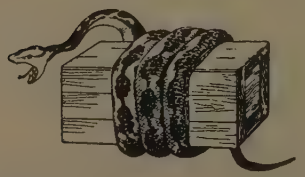

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Types of Spray Deposit:—

A. Apple sprayed with lead arsenate alone.

B. Apple sprayed with lead arsenate to which casein spreader has been added.

[Illus. by courtesy "Jour. of Agric."]

as satisfactory as arsenate of lead, and it has the advantage also of not being toxic to human beings. Very few detailed experiments have been made with Derris in this country.

White Oils.

White oils represent a distinct advance on the old red miscible oil. The improvement is not so much in increased toxicity to the insect—indeed, certain of the red oils are definitely superior to many white ones in this respect—but rather in the reduced liability to damage to the trees. In this particular, the difference between the two is great, and much of the objection to the use of oils, particularly on Citrus, disappears when white oils are used.

White oil sprays have been used with considerable success in the control of the codlin moth in Victoria. Experiments, conducted by the Department of Agriculture over a period of years, at Harcourt, Blackburn, and Somerville, have given the results summarised in Table II.

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CANNED FRUITS

Australian Canned Fruits

Higher Opening Prices than Last Year.

THE MINIMUM PRICES at which Australian canned fruit can be sold in the United Kingdom this year have been fixed by the Canned Fruit Export Control Board at increases ranging from 10½d. to 1/1½ a dozen tins above the opening prices for 1934. These prices, on a c.i.f. London basis, are as follow:—

Size.	Choice. Doz. Tins.	Standard. Doz. Tins.	Second. Doz. Tins.
Apricots.			
30 oz.	7/9	7/–	6/1½
16 oz.	5/–	4/6	—
Peaches.			
30 oz.	7/6	6/9	6/4½
16 oz.	4/9	4/4½	—
Pears.			
30 oz.	8/3	7/6	7/1½
16 oz.	5/6	5/–	—

In 1934 the price was 6/1½ a dozen tins as the opening price for standard Apricots, 30 oz. size, 5/7½ for Peaches, and 6/4½ for Pears, all c.i.f. London. The outlook in the London market at that period was dull largely owing to the heavy carry over from the previous year. These prices were relatively low to permit clearance. Throughout the year, the demand improved and satisfactory sales were made. Competition from the United States was less keen owing to Government control of the industry in that country, and for the year the record quantity of 1,340,500 dozen tins of canned fruits was sold. This quantity was nearly double the previous high record, and has resulted in the export trade entering the new season without the overburden of a carry over.

Growers benefited by the satisfactory export market. The minimum prices for growers fixed by the Sugar Industries Concession Committee last year were £7 a ton for Peaches, £8 a ton for Apricots, and £7 a ton for Pears on growers' stations. Premiums ranging from £1 to £3 a ton were paid on these prices.

This year the Committee has fixed £10 a ton for Peaches (£11 for mid-seasons), £12 a ton for Apricots, and £10 a ton for Pears.

Premiums are being paid for Apricots, as canners estimate that the crop is the poorest for many years. Pears should also be light, but the Peach crop, they believe, will be normal.

Strong Demand in London

Advance in Prices.

THERE has been a heavy demand in England for Australian Canned fruits, despite increased prices.

Although the higher prices were announced in London only on January 22, between 600,000 and 700,000 cases of canned fruit were sold promptly. This strong demand, they say, is unprecedented, more fruit has been sold in a few days this year than in the whole of 1933. Evidently English buyers are satisfied with the prices, and with the quality of Australian canned fruits. Less competition from U.S.A. and South Africa is expected.

They say that the season for soft fruits has been treacherous, that supplies have been light, and that they will be unable to depend upon the condition of the fruit. They had intended to pack from 900,000 to 1,000,000 cases, but they will now seek all the fruit available and the pack will probably exceed those figures.

Shortage of Local Supplies?

The problem at the moment is as to supplies of canned fruit for Australia. Canners state that the season for soft fruits has been uncertain, with light supplies, and the quality of the fruit variable because of seasonal conditions.

However, it is understood that canners will pack to full capacity, and the total should exceed 1,000,000 cases.

Canned Exports Increase

1934 Shows Big Figures.

The latest bulletin issued by the Department of Commerce, under date January 22, 1935, gives the following information regarding the export of canned Apricots, Peaches and Pears during 1934:—

A total of 2,633,971 dozen 30-oz. tins were shipped, representing:—Apricots, 375,808 dozen, Peaches 1,496,698 dozen, and Pears 761,465 dozen. This was an increase over 1933 of 1,197,805 dozen tins. In addition to the above 30-oz. report, there were also shipped 274 doz. 10-oz. tins of Apricots, 1,818 dozen 10-oz. tins of Peaches and 594 dozen 10-oz. tins of Pears. In the larger size tins there were 1,025 dozen 104-oz. tins of Apricots, 2,932 dozen 104-oz. tins of Peaches and 9,882 dozen 104-oz. tins of Pineapples shipped, in addition to 178,110 dozen 30-oz. tins of Pineapples.

Goulburn Valley.

Shepparton. — Early in January the Shepparton cannery was busy handling 100,000 tins of Apricots daily: 200 hands were then operating, and these numbers will be largely increased when the Pears and Peaches come in.

The Pears are coming on nicely, although the crop is lighter than last season. A violent windstorm in mid-January wrought great havoc among orchards.

Towards the end of January the packing sheds were working day and night on Pears for export. On January 29 a special train of 14 refrigerated trucks conveyed 8,000 cases of Pears (W.B.C.) and Plums from Shepparton to Port Melbourne for shipment per "Mongolia."

THE MANGO.

Popularity Increasing.

With Australia's immense area extending well into the tropics, exotic tropical fruits are obtainable in the southern States during certain seasons, and the delicious Mango has made a place for itself during the past few years. In Western Australia, with its warmer and more settled climate, Mangos are grown fairly easily within a few miles of Perth, whilst farther north Bananas, Papaw and Pineapples flourish.

The Mango flavor pleases the most discerning palate and makes it a favorite for dessert, fruit salads, flavorings and other uses such as fruit drinks and chutneys. In size it ripens at an average weight of eight ounces, reaches maturity in summer and is golden yellow in color.

AN ORANGE QUEEN.

A lady was responsible for the first introduction of Oranges into United States and to-day she is venerated by American growers. She was Eliza Tibbetts. While living in California, a friend in Brazil sent her some Orange pips which she planted and from this humble beginning has grown the American Orange industry. So grateful are the American people who are interested in the industry that they have erected a monument to her memory on the spot where the first trees were grown, but her grave is unknown and the whole country is being combed by enthusiastic Orange growers to locate it.

FUMIGATING CITRUS TREES

URGENT NECESSITY FOR CONTROL OF SCALE PESTS :: EFFECT OF HUMIDITY :: RATES OF DOSAGE :: VALUE OF WHITE OILS.

By J. L. Provan, Horticultural Research Officer, Vic. Dept. of Agriculture.

THE FUMIGATION of Citrus trees formed the subject of a valuable illustrated article by Mr. J. L. Provan, B.Agr.Sc., Horticultural Research Officer, in the January issue of the Victorian Journal of Agriculture.

The two principal fumigants in use in Victoria are Cyanogas "A" dust and calcid briquettes.

Humidity.

The humidities, in the northern parts of Victoria, where the major Citrus districts are situated, are frequently low, and it is likely that these low humidities have been responsible for the poor fumigation results, which are sometimes experienced. When the temperature is less than 80 degrees F. and the humidity drops below 40 per cent., it is a good practice, when fumigating with calcium cyanide, to increase the dosage.

Humidities of from 40 to 80 per cent. are favored for fumigation work, but, in some cases, 80 per cent. may be exceeded, providing the temperature is below 70 degrees F. The average humidity in the Mildura district, at 9 p.m., for the past 22 years, has been 41 per cent. for January, and 44 per cent. for February, rising to 51 per cent. in March. The average temperature during these months is 76 degrees, 76 degrees and 70 degrees F., respectively. This district may be taken as typical of the far northern areas, and it will be realised that for an average humidity of 40 to 44 per cent. to be maintained, long periods of lower humidities must occur frequently.

Presence of Wind and Water.

Fumigation in windy weather is inadvisable, as unsatisfactory kills usually result. Wind in excess of a velocity of 5 miles per hour causes a noticeable buffeting of the tents, and the bellows-like effect produced is thought to reduce the concentration of the gas by increasing the leakage through the tent.

Water on the trees, either as dew or rain, affects the concentration of the gas, because this gas has a marked affinity for free water. Fumigation has been successful in the Goulburn Valley district after 21 points of rain, and, while the trees and tents were still wet; but it is a risky procedure, and while damage may not occur to the tree, the scale kill may be unsatisfactory.

The temperatures and relative humidities which have been found safe for fumigation in Northern Victoria are:—

Temperature.	Relative Humidity.
80 deg. to 90 deg. F.	Below 40%
75 deg. to 79 deg. F.	Below 60%
70 deg. to 74 deg. F.	Below 82%
60 deg. to 69 deg. F.	Below 90%
50 deg. to 59 deg. F.	Below 94%

Table 6.—Rate of Dosages for Small and Large Trees.

Temperature more than 60 deg. F. Relative Humidity more than 60 per cent.

Size of Tree. Height and Diameter.	Approximate Volume in Cubic Feet.	Cyanogas "A" Dust. Dosage Ozs. Dust.	Cyanogas "A" Dust. Rate of Dosage.	Calcid Briquettes. Dosage No of Briquettes	Calcid Briquettes. Rate of Dosage.
7 x 8 . .	317	4	1 oz. to 79 cub. ft.	2½	1 gr. to 7 cub. ft.
12 x 10 . .	848	8	1 oz. to 106 cub. ft.	5	1 gr. to 8½ cub. ft.
13 x 12 . .	1,324	13	1 oz. to 102 cub. ft.	6	1 gr. to 11 cub. ft.
14 x 15 . .	2,227	22	1 oz. to 101 cub. ft.	11	1 gr. to 10 cub. ft.

Fumigation Injury.

Most of the fumigation damage which occurs at present could be avoided if the periods of fumigation were limited to those conditions which have been proved to be safe. For summer fumigation in Victoria, the atmospheric conditions which should be avoided are high temperatures and high humidities occuring simultaneously, especially when combined with sunlight. If the temperature is low and the humidity high, or vice versa, night fumigation, generally, will be safe.

It is recommended, however, that fumigation should be discontinued above a relative humidity of 85 per cent. unless performed under the direction of a very experienced fumigator, who can estimate the tolerance of the particular tree being fumigated.

Approximate Cost of Fumigation Sheets (Octagon Shape).

Size.	British. Calico.	Heavy Tent Cotton Duck.	10½-oz. British Super Cotton Duck.	Super British Grey. Calico.	12½-oz. British Pure Cotton Duck.
18 x 18 . . .	26/4	35/8	50/-	54/-	59/-
24 x 24 . . .	45/-	62/6	89/-	98/-	106/-
30 x 30 . . .	66/4	93/2	133/-	147/-	160/-
36 x 36 . . .	90/-	127/6	184/-	203/-	221/-
42 x 42 . . .	—	176/2	253/-	279/-	305/-
45 x 45 . .	—	203/-	292/-	322/-	352/-
56 x 56 . . .	—	303/6	437/-	482/-	52/6-

Sheets branded with capacity measurements.

These prices are less 2½ per cent. cash discount, plus 5 per cent. sales tax.

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Bordeaux Mixture and Fumigation.

Very disastrous results frequently occur when fumigation follows too soon upon a Bordeaux spray, or after the trunks of Citrus trees have been painted with Bordeaux paste. Various authorities state that periods of from six to ten months should elapse before such trees are fumigated. Butler and Jenkins (7) found that the formation of cupric cyanide—the harmful compound —was determined by the ratio of copper sulphate to quick-lime used in making the mixture. A neutral or approximately neutral Bordeaux mixture was the only type that could be recommended with safety when sprayed plants were to be subjected to fumigation by hydrocyanic acid gas.

Combination Treatment.

Combined treatments of white oil emulsion sprays, followed in a week or two by fumigation, is a practice frequently recommended in California. Victorian growers, who have heavy infestations of red scale on their trees, would find such a treatment very effective. Such intense measures would reduce the scale infestation to such an extent that the grower could combat the pest with less drastic treatment.

One of the advantages of such a programme is that the small percentage of live scale, usually on the fruit, which may survive a fumigation, is reduced by the preliminary oil spray.

White Oil Emulsion Sprays.

While the object of this article is to deal, primarily, with the control of red scale by fumigation, it is considered desirable to draw the attention of growers to the main points to be observed in controlling this pest by spraying with white oils.

In Victoria it cannot be overlooked that many growers have retained con-

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PORT KEMBLA, NEW SOUTH WALES

The Right Material for Plant Disease Prevention and Control

GUARANTEED 99% PURITY

GRADES—Mixed Crystals, Fines, Granulated (Snow), Packed in Suitable Containers for Growers' Requirements.

Agents for All States : **ELDER SMITH & COMPANY LIMITED, All Capital Cities.**

BOOKLET—*"Better Yields by Spraying with E S A Bluestone" obtainable on application to Elder Smith & Company Ltd.*

trol of the red scale problem, solely by the use of white oil sprays. To achieve this control, constant and thorough spraying must be adopted. If the infestation becomes very heavy, then it is problematical whether control by spraying is economical. It appears from recent tests in this State that two oil sprays should be applied; one during January or February, and the other in April or early May.

As oil spraying, to be effective, depends on contact between the oil film and the scale insect, the necessity for thoroughness will be appreciated.

Further Considerations.

There is an urgent need for those growers, who are unfortunate enough to have red scale in their groves, to adopt some concerted action in an endeavour to reduce the infestation. Certain officers of the Department of Agriculture have been given the power, under the Vegetation and Vine Diseases Act, to compel growers to adopt effective measures of control against this, and many other, proclaimed insect pests. Fruit infested with red scale is not permitted to be sold.

There should be no necessity to compel growers to help themselves, and if district organisations could foster concerted action, even among small groups of growers whose groves are adjacent to one another, then red scale would become a less serious menace than it is to-day. The obstinate grower, with an infested grove, especially when adjacent to other groves commercially clean could be suitably dealt with.

Citrus Research

£10,000 Grant by Commonwealth Government.

FOR SCIENTIFIC RESEARCH into problems of the citrus industry, the Commonwealth Government has approved of £2,000 a year for five years being spent.

The research is to cover orchard factors, such as variety of fruits, soil types, orchard management and maturity at picking; storage problems, temperature, humidity conditions and pre-cooling, and handling and transport, sweating, processing and picking. The investigation has been approved by the Commonwealth Citrus Investigation Committee, and will be carried out under the auspices of the Council for Scientific and Industrial Research.

Senator McLachlan, Minister in Charge of Development, pointed out that the quality of Australian citrus fruit varied greatly, and that before a regular and profitable export trade could be assured it would be necessary for Australia to produce high-quality Oranges and to improve the storage conditions.

Australian Citrus Export Association

With a view to co-ordinating the activities of all citrus growers' organisations and exporting interests, it has been decided to form an Australian Citrus Export Association, which object would be to encourage the production of such varieties as are in demand overseas, improve growing, grading and export of citrus fruits, and stimulate and develop the trade whilst at the same time control it in some more general manner than is at present possible. Such an association would effect closer co-operation between the various citrus growing districts and States, and would attempt to secure reduced shipping charges and improvements in transport facilities. The representation proposed is by two members each from the coastal areas of N.S.W., the Murrumbidgee irrigation area, South Australia, and Victoria. The proposals are to be submitted to the various organisations most closely concerned for their consideration with a view to early action.

Successful Orange Export

High Prices for Show Fruit.

Mr. H. Dakin, of Sydney, who offered a prize at the last Gosford Fruit Show for the best export pack of Late Valencia Oranges, has received word from his London principals, Geo. Monro Ltd., London, to whom the fruit was consigned, that the three cases entered by Mr. White, of Mangrove Mountain, sold for 18/- per case, and the one case from Niagara Park, Growers Ltd., realised £1. Some of the fruit in the remaining case, sent by Mr. A. J. Hitchcock, of Gosford, was stolen in transit.

Regarding these Oranges, Messrs. Geo. Monro Ltd. wrote stating:—"We only wish the Australian grower would pack and forward fruit of this quality to London, when we are sure that the prices realised would compensate for the extra care taken."

Commenting on the foregoing, Mr. Dakin writes:—"The fruit was exhibited at the Gosford Show and was not shipped for a week or ten days after packing. The result shows that if special care is taken, Oranges can be landed in England in good condition and sold at payable prices. If this care can be taken for show purposes it can be done with export fruit, and it will pay to do it. The fruit was sent forward by the "City of Brisbane."

He: "What part of the car causes the most accidents?"

She: "The nut that holds the wheel."

Citrus Crop Prospects Good

Red Scale Must be Attacked.

Prospects for the harvests of Oranges, Lemons, and Grapefruit are promising, states the Department of Agriculture in its seasonal report issued early in January. Valencia Late Oranges are heavy in the Mildura district, but only a 50 per cent. crop is expected in the Swan Hill area owing to a very light blossoming. Reports from Mildura indicate that a 90 per cent. crop of Washington Navels is expected there, and a 100 per cent. Navel crop should be produced around Swan Hill. Only a 60 per cent. crop is expected from the Rochester-Bamawn district. **Growers are advised to adopt early measures for the control of red scale by fumigation or application of white oil sprays.**

Insects Attack Citrus Trees

Control Methods for Bronzy Orange Bug.

Reports have been received by the N.S.W. Dept. of Agriculture from their fruit inspector in the Maitland district that in parts of that district citrus trees are severely attacked by the bronzy Orange bug (Oncoscelis sulciventris). A recent departmental statement points out that this pest can be controlled by spraying with the following mixture:—

Resin, 10 lb.; commercial caustic soda, 5 lb.; fish oil, 1½ lb.; water, 40 gallons.

The resin and soda should be ground and mixed whilst dry, and then boiled in two gallons of water for about two hours. The fish oil should then be added and the mixture brought to the boil. This stock is then mixed with the remainder of the water.

In the early morning the bugs are very sluggish, and can be readily shaken on to a piece of canvas or sheeting, by jarring the tree. They may then be destroyed by dropping them into a tin containing some kerosene.

Once the bugs have reached their adult or winged stage they are extremely difficult to control by spraying.

MONEY available for ORCHARDISTS, BERRY FRUIT GROWERS, etc. Temporary PRIVATE LOANS, Lowest Interest. Repayments to suit, any reasonable security. Confidential. No obligation. Personal application only.

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Protect Your Fruit Against Scale . . .

Spray now with Gargoyle White Spraying Oil! This increasingly-popular spraying oil is Made in Australia with an exact knowledge of just what is required of it.

It possesses particular scalecidal properties. It quickly destroys the respiratory organs of all insects. It has other beneficial effects on the trees.

For instance, its highly-refined medicinal oil base has an "emolient" effect on the bark, ensuring a freer flow to the sap stream. The unequalled summer spray is ——————

Gargoyle WHITE Spraying Oil

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VACUUM OIL COMPANY PTY. LTD.

The Export of Oranges

IMPORTANCE OF EXPORT TRADE TO N.S.W. :: HIGH QUALITY FRUIT IS EXPORTED.

A COMPLAINT, INVESTIGATED, PROVES TO BE UNFOUNDED.

IT IS URGENTLY NECESSARY to develop the export market for Australian Oranges.

Very earnest efforts in this connection are being made by experienced growers and exporters in the State of New South Wales — the principal Orange-growing State of the Commonwealth.

Some very high quality Oranges are produced in N.S.W.; growers realise that to secure and maintain an export trade they must "deliver the goods." It is the "repeat" orders which are required. Thus it is that every encouragement should be given to N.S.W. in this connection, instead of knocks, which it is felt are far from justified.

* * *

In particular the criticism concerning the shipment of Oranges from Sydney by the "Somerset" last September, has proved to be unfounded.

When this vessel arrived at Adelaide inspection was made of a few cases, and following this the South Australian Premier, Mr. Butler, saw fit to make some adverse criticism which was reported in the press, not only in Australia, but in the U.K., and undoubtedly did harm to the N.S.W. citrus growers, by creating the impression that unsuitable fruit was shipped by N.S.W. growers.

Exception was taken to these remarks at the time, and the Minister for Commerce was approached, pointing out that experts had seen most of the fruit loaded on this vessel, and that it was of excellent quality, and in the right condition for export.

* * *

A reply is now to hand from the Department of Commerce, from which it will be noted the information is confirmed that the Oranges were perfectly sound at the time of shipping. The letter is as follows:—

With reference to letter dated November 26, 1934, concerning the shipment of Oranges per s.s. "Somerset," I desire to advise that the report is now to hand from the High Commissioner's Office, London, on the condition of this fruit.

The officer furnishing the report states inter alia:—

"I have to report that the 'Somerset' showed very little mould waste. The shipment was a pleasant surprise and turned out sounder than most of the previous boats. The chief engineer informed me that he had fitted a special fan which he used, continuously blowing air through the hold. I feel sure that he exercised extra care to carry the fruit successfully, especially after the impression gained that mould waste was developing.

"Although the condition of the 'Somerset' fruit was better than expected, the quality was not generally good. The market may be gauged by the price of Brazilian, which were bringing up to 19/9 per case, while the best of ours are far below this figure."

Yours faithfully,
H. THOMPSON, Acting Sec.,
Dept. of Commerce.

* * *

Effective Price Comparison.

In regard to the criticism of the quality of the fruit, a reply has been sent to the Department of Commerce, that the quality of the fruit was really good, and that the comparison made between Australian and Brazilian fruit can be explained only when conversant with the quality of this particular Brazilian Orange.

This is the "Pera," which is a particularly fine Orange and better than the Valencias grown in Australia.

It is very thin skinned, full of juice and also very sweet.

To anyone with a full knowledge of the conditions, it is realised that Australia must place her Valencias on the English market by the end of October, and at the latest on November 10, as from this date supplies of Spanish and Jaffa fruit can be expected and, in consequence, values come back considerably.

This means that Australian Valencias will not be as sweet as the Brazilian "Pera," and we therefore cannot expect to receive the same prices.

At the same time it should be noted that Valencias shipped from N.S.W. on the "Somerset" sold at 14/- to 15/- for the best counts, and these prices are quite satisfactory.

* * *

IT IS VERY IMPORTANT that the foregoing should receive the earnest consideration of all interested in the Australian fruit industry. New South Wales has the right quality of fruit and the men capable of attending to all the details for export to the United Kingdom.

In particular, Members of Parliament will note the sincere efforts which are being made constructively to build up an export trade in Oranges on sound lines. Should the idea be accepted that bad fruit is being shipped from N.S.W., it would have an adverse effect on any request for assistance.

Trade with New Zealand

AUSTRALIA WILL ADMIT 10,000 TONS OF POTATOES A YEAR.

RESUMPTION OF EXPORTING AUSTRALIAN ORANGES TO N.Z. EXPECTED.

EARLY in January, Mr. Lyons announced that the Federal Ministry proposed to admit 10,000 tons of Potatoes into Australia from New Zealand.

It is thought this will remove the principal objection in New Zealand to the resumption of trade in Australian citrus fruits.

Doubt has been expressed, however, as to admission into New Zealand of Oranges from New South Wales because of the prevalence of fruit fly in that State, whereas South Australia and Victoria are free of the pest.

However, the fact remains that some important citrus growing districts of New South Wales are free from fly, and a certificate to this effect could be supplied. There should be no risk with fruit from clean areas.

* * * *

It will be remembered that the Australian "fire-blight' embargo on Apples from New Zealand has been lifted in so far as fruit from districts free of the disease is concerned.

SPRAY HOSE
BURST PROOF
ALL RED
HAND-MADE
BY
HARDIE RUBBER CO. LTD.
"EVERY INCH AUSTRALIAN"
Obtainable at All Stores.

Commercial Notes.

Ardmona Co-operative Co.

The year ending November 30 showed a substantial increase over 1933 in turnover. Stocks have been cleared well and prospects for 1935 are satisfactory. A profit of £340 is reported after paying £12,450 interest on loans, which profit has been applied to the accumulated loss of £123,800. Although finances improved during the year, bank advances, guaranteed by Government, amount to £208,794.

Kyabram Cannery.

Good Year Reported.

After making provision for a further payment to growers of £3,437, interest £10,487, and other amounts for depreciation and taxation, the Kyabram Fruit Preserving Company's annual report showed a profit of £6,005 for the year ending September 30.

The factory report shows that 3,507 tons of fruit were processed, producing 5,200,000 cans and 159 tons of pulp. A substantial increase in sales was reported in 1934, and accumulated stocks were satisfactorily cleared.

Profits Shown by Three Companies.

Returns issued by four large fruit preserving companies for 1934 show that a general improvement was seen, as compared with 1933, when competition was particularly severe. The price of canned fruit has recovered from the slump which followed the abnormal crop of 1932-33. Manufacturers of preserves and condiments experienced a satisfactory demand for quality products. The following table from "Argus," 5/1/35, shows that in only one instance was a loss incurred in 1934, and indications are that this will be converted into a profit during the coming year.

	1932.	1933.	1934.
Henry Jones	£171,100	£111,400	£134,500
Rosella	32,600	26,000	35,400
H. M. Leggo .	*8,000	*9,900	2,100
Francis Longmore .	*2,800	*4,800	*2,100

*Loss.

For the Majority

FEW are so fortunately placed that the future holds no problems and since it is apparent that the majority of people receive moderate incomes, it is just as obvious that the majority can attain financial independence only by systematic saving.

After all, some sacrifice, some self-discipline is unavoidable if anything worth while is to be gained.

The Savings Account provides a safe, profitable and convenient method.

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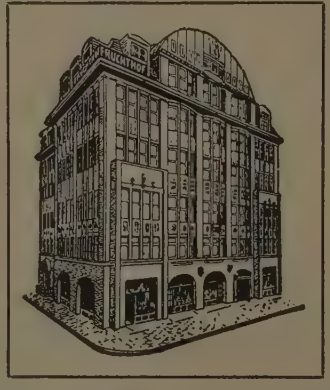

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Cables: Orange Bremen.

NEW REGISTRATIONS.

Salter Bros. Ltd. Regd. 21/12/34. Capital £5,000 in £1 shares. To carry on business of fruit merchants and dealers in fruit, vegetables, etc. Reg. office: Sydney.

Passila Passionfruit Products Ltd. Regd. office: 40 Queen-street, Melbourne. Capital: £20,000 in £1 shares. Subscribers: Martin Savory Dunne, Robert Joseph Dunne, Rupert Arthur Tunney, Oliver Francis Dixon and David Wilson.

Oakover Canning Co. Pty. Ltd., manufacturers, preservers, packers of foodstuffs, products, etc. Regd. office, 31 Queen-street, Melbourne. Capital, £20,000 in £1 shares. Subscribers: Charles Jenkin Parnham and James Roland.

BUSINESS CHANGES.

Newcastle Fruit and Produce Co. (Robert F. N. Alderson), Steele-street Markets, Newcastle (N.S.W.), wholesale fruit merchant. The name has been changed to N. & A. Fruit and Produce Co. Reg. 30/11/34.

Financial.—Specialty Investments, of 89 Collins-street, City, desire to make it known that they have now decided to grant liberal advances to those deserving orchardists or berry fruit growers, who suffered such severe reverses as a result of the recent disastrous floods and storms.

Those desirous of participating in these new and reasonable loans, are asked to forward their application, giving full particulars, which of course will be treated as private and confidential, and without any obligation whatsoever. The rate charged will be quite moderate and strictly in accordance with the circumstances and nature of the security offered. There will be no commission or legal fees. These loans range from £5 to £50 and are of 3 to 12 months' duration.

If our readers prefer, they can make their enquiry or lodge their application (free of charge) through this office, who will gladly take up the matter on their behalf, if they wish.

Fruit Breeding and Pollination Investigations

IMPORTANT ACTIVITIES OF N.S.W. DEPT. OF AGRICULTURE.

(Continued from the January issue.)

Peaches.

The programme of work in Peach breeding which was initiated in 1928 by the Plant Breeding Branch of the New South Wales Department of Agriculture, is now beginning to bear fruit. The chief objectives designed in this work are to evolve early canning Peaches to replace Tuscan and Leader, which are of poor quality, and to produce mid-season canning Peaches which yield better than the present varieties which are not quite satisfactory in this respect. Mr. Poggendorff has been in charge of this work at Yanco Farm, and he now reports that a seedling of the cross Leader by Goodman's produced very promising first fruits last season, coming in about mid-January, i.e., about the same time as Leader, and being apparently superior in quality to this variety. Two Tuscan-Leader seedlings which ripen about the same time are also indicated as promising canning Peaches. Useful information is being obtained by Mr. Poggendorff as to the value of different varieties as parents in breeding. In spite of its freestone character, Leader apparently carries the "cling" character as a recessive, for many Peaches of this type are produced in the progeny of its crosses. It is indicated as a valuable variety in the breeding of early canning sorts, and it is intended to use it widely in further breeding. On the other hand, the Triumph Peach seems to carry strong factors for the freestone character which appears largely in its seedlings. It is therefore somewhat useless for the breeding of canning varieties.

It appears that this work is on the verge of the evolution of improved early canning Peaches, but the production of better main crop canning varieties may be more difficult of accomplishment. Mr. Poggendorff states that the ideal main crop canning Peach would be one which combined the quality of Golden Queen with the yield of Pullar's Cling and the hanging power of Goodman's Choice.

Similar work is being done by Mr. Shirlow at Hawkesbury Agricultural College, with dessert Peaches. Several seedlings fruited during the past season, and Mr. Shirlow refers to a Blackburn-Kaiora seedling which is a yellow fleshed freestone of good size, color and flavor, coming in towards the end of December when most other varieties ripening about this time (such as Wiggins, Carman, Duffy's Xmas Box and Peregrine) are white fleshed clingstones.

Some Blackburn-Triumph seedlings which are of good quality are also promising on account of their earliness, coming in about mid-December, when Peaches of good quality are scarce.

Nectarines.

Four year old seedlings of Goldmine and crosses with Goldmine, which are growing at Narara Nursery, have not yet fruited, but are expected to fruit next season.

Some three year old seedlings have fruited at Hawkesbury Agricultural College, but none of them yet show any promise.

A good germination was obtained from the cross Goldmine x W.C. Fripp, made by Mr. Shirlow at Hawkesbury College in 1932, and this cross was repeated last season.

Almonds.

On account of an extremely natural setting of fruit in Almonds, no information of any value was obtained from the investigations in Almond pollination at Yanco during 1933.

Apricots.

Some of the seedlings which are being raised at Yanco in the project of breeding improved varieties of Apricots, fruited during the year, but nothing of very much promise was included amongst them.

Many seedlings have been obtained from seed introduced from North Africa and Turkestan, where an abundance of different types are found and some of these may provide useful additions to our cultivated varieties.

Further crosses have been made by Mr. Poggendorf during the past season with Trevatt and in addition, some open pollinated seeds of Moorpark, Rose de Vaucluse and Lossie Blenheim have been sent to Narara for germination.

Grape Breeding.

The Grape breeding project is making slow progress, and it is doubtful whether much can be expected from it unless a large number of crossbred seedlings are raised each year. The emasculation of Grape flowers is an extremely slow and tedious process and comes at a time when Mr. Poggendorff is busy with wheat breeding work at Yanco. However, in view of the importance of the objectives in Grape breeding, and since the wheat breeding work at Yanco is not so important as it can be covered to a large extent elsewhere, it is intended to devote more time to Grape breeding at the expense of wheat breeding at Yanco next season.

Some of the seedlings of the Grape crosses fruited at Yanco during the year, and Mr. Poggendorff reports that all the Ohanez seedlings and crosses produced black Grapes, indicating a dominance of this character. Although some were of better quality than Ohanez, they lacked the tough skin necessary to good carrying power. This character may also be dominant, and as it is possible or even likely that the valuable characters of cultivated Grapes are mostly recessive, it is proposed to obtain seed from many seedlings to grow into the second generation for the segregation of these recessive characters.

Additional crosses were made by Mr. Poggendorff during the year.

Citrus.

The raising of seedlings of the principal commercial varieties of citrus is being continued at Narara Nursery with the object of finding improved strains of these varieties. In addition, some crosses are being effected between different varieties of citrus in the hope of evolving a superior new sort. The method being followed is to raise seedlings of these varieties and crosses and when they are large enough to bud them on to permanent stock trees of rough Lemon. A large number of buds are put on a single tree and when any promising fruits are developed, it will be possible to cut budding wood behind them to perpetuate the type. Seedlings of Valencia Orange, chance seeded Washington Navels, Lisbon Lemon and Marsh Grapefruit, together with some crosses of Washington Navel by Valencia and Washington Navel by Grapefruit, have already been budded in to these permanent trees.

During the past season, seedlings of Golden Nugget and Washington Navel Oranges from chance-seeded fruits and of the crosses, Golden Nugget by Valencia, Washington Navel by Valencia and Washington Navel by Marsh Grapefruit have been raised at Narara.

A collection of citrus species and varieties is gradually being accumulated at Grafton Experiment Farm, and Mr. Benton, Citrus Specialist of the Department, has suggested a crossing programme to improve the qualities of the Valencia Orange and of the Marsh and Thompson Grapefruits.

Passion Fruit.

The collection of Passiflora species is still being added to at Grafton Experiment Farm. All species have been found to be susceptible to "Woodiness," but some native Queensland species are thought to be resistant to brown spot.

Strawberries.

There is a definite need for improvement in some phases of commercial Strawberry culture in the direction of obtaining more suitable varieties, and the Department has been giving close attention to these phases for some years

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at Hawkesbury Agricultural College, where the work is in charge of Mr. Shirlow.

The Fendelcino Strawberry is now considered to be the most popular variety grown in the commercial Strawberry-growing areas round Sydney, but its chief drawback is that it has only pistillate or female flowers, and it is necessary to grow another perfect flowered variety with it to act as a polleniser for it. Rhode's Special and Creswell's Seedling are the chief varieties used for this purpose, but the former is a poor grower and has inferior berries, so the space taken up by it is wasted, while Creswell's is too late in ripening. **A new variety evolved by a local grower, and named Mason's Seedling, is now being used to some extent in this way, and Mr. Shirlow states that it is very promising for such use and even for more extensive commercial culture.**

In the hope of finding some Strawberries more suitable than the local varieties, most of the best commercial Strawberries of U.S.A. and Canada were introduced in 1931 by the Department. Mr. Shirlow has now had these varieties under observation for several seasons at Hawkesbury College, and he states that although some of them produce berries of excellent quality, they are subject to heavy infection with leaf scorch (Diplocarpon earliana), and other diseases just as they reach the height of their cropping, the plants gradually wilting and the crop being lost. It is therefore not possible to recommend any of these for commercial culture at present.

For the production of improved Strawberries, it therefore seems that local varieties will have to be developed by crossbreeding. Mr. Shirlow is now applying himself to this phase of the work, and some of the American varieties of excellent quality have therefore been crossed with local and other disease resistant kinds.

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This new ANTI-BRUZE Fruit Pad affords your fruit full protection and enhances its value to the prospective purchaser.

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What of the Green Crop?

By F. M. READ, M.Agr.Sc, Chief Inspector of Horticulture
Victorian Department of Agriculture

THE SEASON is fast approaching when every orchardist should go into his garden and meditate upon the great advantage to be gained from a liberal supply of organic matter in the soil; and the ways and means whereby it may be increased.

Under a system of clean cultivation, such as is practised throughout the spring and summer in Victoria, the natural accumulation of humus by the growth of miscellaneous surface plants is largely eliminated and, further, the actual loss of organic matter from the constantly stirred surface layers tends to be high.

It is probably true that no other phase of soil fertility in Victorian orchards is more important than the yearly ploughing in of grenstuff; and yet this operation may very well be termed the "Cinderella" or orchard practices.

There would appear to be three main methods of providing soil humus in addition to the application of farm yard manure and straw.

1. We can sow a crop of peas, beans, oats, barley, rape, or, in fact, any crop which will grow well and give us a good bulk within a few months. In general, the leguminous crops are preferable when they will grow strongly; but if they will not thrive the crop most suitable to the district should be sown. If this crop is not already known, then experiment should determine it.

It is essential that such a crop

be sown early

so that it secures a good start before the cold weather comes.

This is undobtedly the most important point in sowing a green crop. It should be sown not later than the first week in March.

I know many orchardists will say that they rarely have time to put in a green crop, and that, any way, harvesting operations extend into March, and later still, so that if a crop were sown it would be trampled on and spoiled. It is undeniable that some orchardists do, nevertheless, manage to sow the crop satisfactorily generally by doing alternate rows in alternate years so that there is still room to reach every tree without walking or driving over the sown area.

2. We can establish such a plant as subterranean clover, which will reseed itself naturally. Clovers have been established on orchards in the Gippsland and Peninsula districts with apparently satisfactory results. There does not appear to be much difficulty in reseeding subterranean when it is ploughed under, as is the general rule at present, in September or later, for the plants go on maturing after ploughing, and until the surface is broken down by the cultivators and harrows. But September ploughing is, for several reasons which need not be discussed here, possibly too late. If this is so it would seem desirable to try some of the earlier maturing strains of clover which are being developed; and get on with the plough in August.

3. The third alternative which may be useful as a stop-gap, but which would not appear as permanently satisfactory as the former two, is to allow the miscellaneous herbage to grow by ceasing cultivation in March. This growth can probably be encouraged by top-dressing with artificial fertilisers. I would suggest that growers try the effect of broadcasting in early March superphosphate and sulphate of ammonia or some other nitrogenous fertiliser at the rate of 1 to 2 cwt. per acre, both together and singly. At Beaconsfield for instance the increased growth of cape weed as a result of applying nitrogen is phenomenal. On such soils sulphate of ammonia will be found preferable to superphosphate as a top-dressing, but on soils well supplied with nitrogen super should be found preferable for autumn application. The grower, by a simple trial, can easily determine this point.

The effects on soil fertility of green crops when ploughed under are comparatively well known; but it is not so clearly realised that, during its growth, the crop by transpiration through its leaves may remove a great deal of water from the soil.

In many of the higher rainfall districts of Victoria, orchard subsoils become waterlogged during the winter months, and in such cases the green crop as a draining proposition will be found to more than justify itself. Experience already has confirmed this. Many growers have told me that since their attention has been directed to this phase of the subject they have made observations which show that under comparable conditions orchard soil is drier under crop than under clean cultivation during a wet winter. It should not be overlooked, however, that in a dry spring the crop may compete very seriously with the trees for moisture unless it is turned under before the trees start into growth.

Tasmanian Crop Forecast.

Apple Crop Below Average: Pears Normal.

(By P. H. Thomas, Chief Horticulturist.)

FRUIT CROP ESTIMATES based on returns furnished by a large number of orchardists throughout the State have been compiled by the Department of Agriculture and indicate an Apple crop ranging between 75-85 per cent. normal. The Pear crop will probably be about 90-95 per cent. normal.

Following the dry warm summer of last season blossoming was heavy amongst all fruits, and for the stone fruits and earlier blossoming Pear varieties conditions favored a good set. Unsettled weather, however, followed, and the setting amongst many Apple varieties was adversely affected. Spraying operations were also interfered with, the result being that in parts of the Huon and in the north, spot and spider are rather prevalent. Mildew, woolly aphis, and other pests are under reasonable control at the present time.

Apples.

Recent alterations in export regulations have resulted in a large amount of re-working during this and last season, and it can be stated with reasonable accuracy that at least 1,500 acres responsible for more than a quarter of a million bushels are temporarily out of bearing.

Taking the average commercial crop at 4,500,000 bushels, it is anticipated that under normal weather conditions during the next few months 3,600,000 bushels will be harvested.

In regard to districts — the Derwent Valley and South Eastern areas appear

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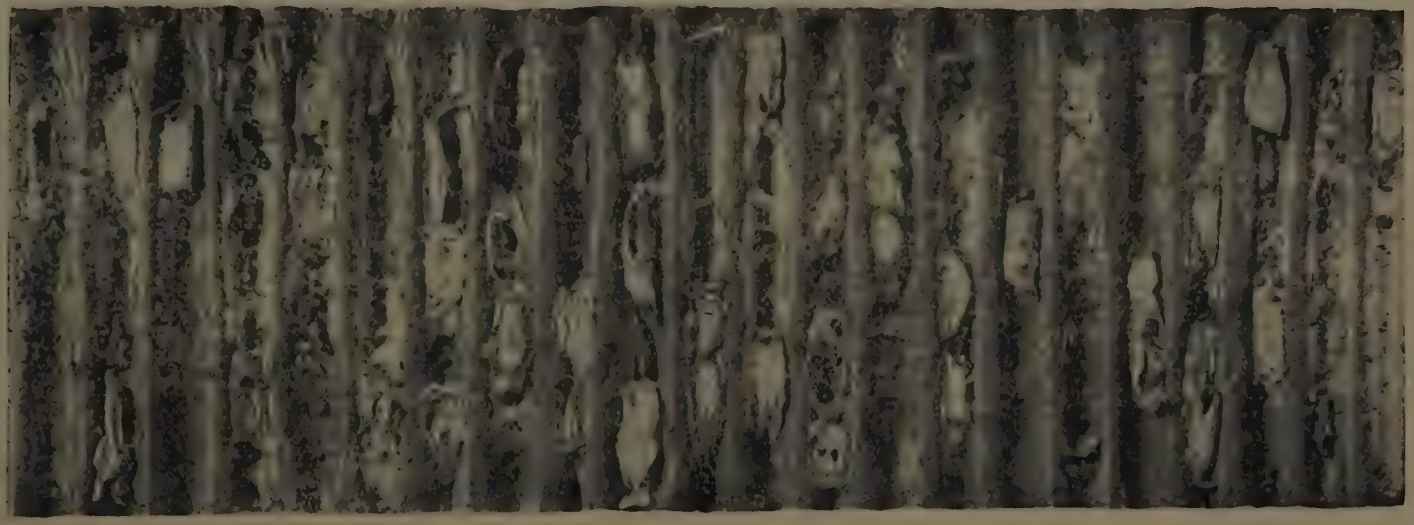

The above photograph (shows the actual size) inner side of an 8-inch section of "Vallo" Patent Codlin Moth Tree Bands in which 60 or more dead grubs or caterpillars can be seen. This, however, does not represent the full number of the kill, as this photograph shows only one set of corrugations. The Band is actually a double trap as it not only traps the grubs in the corrugations lying immediately next to the trunk of the tree (as shown above) but a similar number are trapped and killed in the second series of small passages which are formed by the smooth outside section of the Band against the corrugated section.

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BRANCHES : SYDNEY — BRISBANE — ADELAIDE — PERTH

to be carrying the most uniformly satisfactory crops, and are at present practically free from disease.

Varieties—

I.—Heavy crops have developed on Jonathan and Granny Smith.

II.—Average crops on Sturmer, Crofton, Scarlet and Delicious, whilst Cleopatra, Democrat and Worcester are good in certain districts.

III.—French Crab, Tasman's Pride, Dunns Seedling, Alfriston and Cox are generally light.

Pears.

Following the light crop last year, Pears in southern parts of the State show a very fair promise. In the north the crop is rather less than last season.

Under average conditions a 90 per cent. crop or some 270,000 bushels should be harvested.

Varieties—

I.—Beurre Clairgeau, Glou Morceau, and Williams are perhaps carrying the heaviest crops.

II.—Very fair crops have set on Beurre Bosc, Winter Cole and Josephine.

III.—Light and patchy crops on Gansells, Giblins, Doyenne du Comice, and Winter Nelis.

This report is based entirely on present conditions, and, as will be fully realised, much depends on the weather conditions during the next few months. A revised estimate will be compiled at a later date.

PURE FRUIT JUICES.

Last season Mr. W. Spry, of the Appura Fruit Juice Co., crushed a considerable quantity of Apples at Somerville, Vic., and placed the resulting drink—aerated—on the market. Appura is pure fruit Apple juice, and is available sweetened or unsweetened. Following the success of this product pure fruit drinks were made from Pineapples, Lemons, Oranges and Passionfruit.

A steady and increasing trade has been built up, as pure fruit drinks are appreciated.

Apart from the drinks, the pure fruit products have also proved invaluable for making ice blocks for children. The ice block blends include, Apple, Apple and cream, Passionfruit, Pineapple, Quince, and Mulberry. All are delicious and healthful.

There is no waste after the fruits are crushed for drinks, as the pulp, particularly of Pineapple, Passionfruit and Orange, is saleable to pastrycooks.

Mr. Spry states that the Apple crushing plant will be operating again at Somerville this season. The Williams Favorite is however one of the Apples which is not suitable for crushing for Apple drinks.

Apple and Pear Export

COLOR GRADING FOR APPLES :: USE OF LAST SEASON'S LABELS :: USE OF STRAWBOARD OR PROTECTIVE MATERIAL COMPULSORY :: ONLY SEASONED CASES NOW USABLE :: NEW REGULATIONS GAZETTED.

Strict Inspection for Arsenical Residue—One Affected Case Will Cause Rejection of Consignment.

IN THE 1934 SEASON Victoria shipped 704,832 cases of Apples and 216,257 cases of Pears. The estimate for Victoria is for 550,000 cases Apples and 350,000 cases Pears.

Regarding the gazettal of the regulations, as decided by the Australian Apple and Pear Export Council, the Superintendent of Horticulture, Mr. Ward, states that the idea of

grading Apples to color

appeared to worry many growers, but there was no occasion for worry.

Green Jonathans should not be packed with red ones.

The amendments provided that in "extra fancy," a Jonathan Apple should have 50 per cent. of color, and a "fancy" grade Jonathan must have 20 per cent. of color. Unless a Jonathan were red over half its surface it should not be placed in the first grade; therefore, it would not be a difficult matter to pack a large percentage of "extra fancy" Jonathans as far as color was concerned.

With regard to "fancy" grade (the old "standard" grade), the new regulations would require less than a quarter of the Apple to be of red color, therefore growers should not pack green-colored Jonathans for export. The comments on Jonathan Apples also applied to other colored or red varieties. For partially red or striped Apples, such as Rome Beauty, only 30 per cent. color was required in "extra fancy" grade, and 10 per cent. in "fancy" grade. With such varieties as Granny Smith, Cleopatra, Stone Pippin, London Pippin and other yellow or green sorts, all that was required was that the fruit should be of even color throughout the case. "Extra fancy" Jonathans should not have less than 50 per cent. color of red; they could, however, be 100 per cent. colored, and "fancy" should not have less than 20 per cent. color, but there was no limit. Growers, Mr. Ward continued were strongly advised to pack as many "extra fancy" grade as possible, and not merely pack "fancy" grade in fear of the fruit not complying with "extra fancy" standard. The chief difference between these two grades was the percentage of color. Slight blemishes to the extent of ten Apples in every 100 Apples in a case was allowed in both these grades.

Only two grades of Apples would be allowed export, which meant that the former "plain" grade was now eliminated. Three grades of Pears were allowed to be shipped — "extra fancy," "fancy" and "good"; growers would pack to the same standards as in past years.

Use of Old Labels.

Growers had a quantity of last year's labels with the word "standard" or "special." **Such labels would be allowed to be used, if the word "fancy" or "extra fancy" were pasted over the top of the "standard" or "special."** This permission also applied to "plain" for Pears, where "good" was to be substituted for "plain."

No Arsenical Residue Permitted.

Every season for some years, continued Mr. Ward, growers and shippers had been warned with respect to arsenical residue on Apples and Pears. **During the forthcoming season any fruit showing traces of arsenate of lead would be instantly rejected.** This applied to Apples and Pears showing arsenical residue in the calyx or stalk end. The inspectors would be more stringent than ever in regard to this matter, and growers and shippers should take heed of this warning. **One affected case in a consignment would be sufficient for the whole of a consignment to be rejected.**

A new regulation provided that all Apple and Pear cases should be protected from bruising by using strawboard and similar protective material. This regulation, in common with others, would also be rigidly enforced.

Pears should have protective material on sides of the case as well as top and bottom.

All cases should be of seasoned timber; this applied to soft as well as hard wood. The timber should be smoothly sawn or dressed in an approved manner. Unsightly cases and those not otherwise complying with the regulations would not be allowed export.

Inspection is to be carried out at various country stations, as well as at the ship's side. Fruit rejected at the wharfs will not be allowed to be repacked for export.

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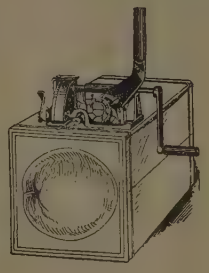

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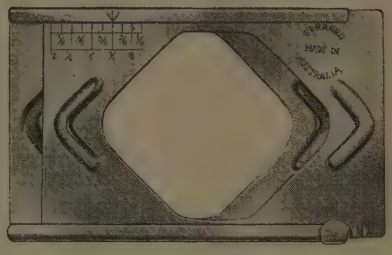

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VICTORIA — Apple Culture Observations District Notes

Apple Culture Observations

Pollination Essential, too Many Solid Blocks of Jonathans — Every Orchard Should Have Beehives—Importance of Shelter Trees—Good Drainage Imperative — Spray Programme for Apple Black Spot.

IN the southern fruitgrowing districts of Victoria this season, the weather conditions have been most unfavorable throughout the spring, and what promised to be a heavy crop of Apples has turned out only an average one. We cannot alter the weather conditions; but we can help nature in other ways. Let us look at the results this season, and learn something from them.

Pollination.

The best setting of Apples in any orchard this season, is on trees adjacent to good pollinators.

In the case of Jonathans which carry very patchy crops this season, I have noticed that Democrats have given the best results as pollinators; with Rokewoods and Granny Smith the next best.

Unfortunately blocks of Jonathan trees, of many acres in extent, are common, and very little is being done to rectify this. During years when the weather conditions at the setting season are good, this lack of pollinators is not noticed, but the loss during "bad" years is considerable.

Growers are earnestly advised to look at their Jonathan blocks and see where the pollinators are needed. Two trees cropping well are more valuable than four trees with mediocre crops. Refurnishing, as demonstrated at the several field days by officers of the Department of Agriculture (and as described and illustrated in the "Fruit World") is easy and gives quick results, and there are several good export varieties that will pollinate Jonathans.

Importance of Bees.

During the blossoming period this season, the weather was stormy, with intermittent sunshine. Under these conditions bees do not travel far from their hives, so it necessary to distribute hives throughout the orchard. Of course, under good weather conditions this may not be necessary, but it is always best to make sure. It is an easy matter to transport bees at night, so they need not interfere with spraying or cultivating activities.

Shelter.

Shelter-belts have played a big part in this season's setting. These shelter-belts are very valuable for two reasons:—

1. They prevent loss of fruit during wind storms.

2. Bees will work in sheltered patches during adverse weather conditions.

There are very many varieties of hedges to choose from; and now is the time to pick out these bleak areas and prepare the ground for planting protective hedges next winter.

Drainage.

Last but not least is the drainage problem. This season has shown the badly drained land at its worst.

It is very apparent that drainage is a big factor in the control of black spot, as well as the setting of fruit. In these respects, well-drained land, whether naturally or artificially, shows out in striking contrast to the wet patches this season. My observations show that black spot on Apples has been kept best under control this season by using the following spray:—Two applications of "Bordeaux" or "Burgundy"—one at the "green tip" and one at the "pink" stage, followed by lime sulphur after the fruit had set.—Gippsland Grower.

Narre Warren North (4/1/34).—Mr. P. Aurisch writes:—

The opening season gave every indication of a bumper crop, but adverse climatic conditions have made the prospect below normal.

Pears—Below normal. Black spot has played havoc in spite of regular spraying. Very few growers have a good percentage of clean fruit.

Apples—A very heavy blossoming, and setting, but with the continual wet conditions the black spot has been responsible for heavy losses. Crop below normal. Some growers' trees have appearance of foliage being scorched, results of black spot ravages. The difficulty of keeping the fungus in check was due to constant rains neutralising the effect of the fungicide sprays.

Prolific feed for stock everywhere, but hay crops partly spoilt through abnormal rains.

Panton Hills.—At the meeting of the Panton Hill and District Fruitgrowers' Association, on January 3, Mr. Cracknell presiding, a circular was read from Mr. J. G. Aird, stating that the Committee appointed at a conference last year had adjourned until April: the acting Secretary (Mr. Aird) had resigned.

Delegates who attended said that little could have been expected from this Committee as it was divided against itself.

* * *

Victoria Market.—Mr. J. P. Cowey, Secretary Monbulk branch of the Farmers' Unity League, wrote stating the Markets Committee had decided against building an additional shed for growers at present, but had approved of growers being permitted to pre-book stands on the Peel-street and Queen-street frontages. Mr. Cowey further stated that his executive was anxious to find a permanent solution to the problem of shortage of stands at Victoria Market and would welcome a conference in Melbourne to formulate a policy.

During the discussion it was stated that the lower sheds were available to growers, but were not being used as this section was not frequented by buyers.

The meeting considered it was not much good agitating for additional space if the growers would not use the sheds provided: further, that if berry growers moved in a body to the lower sheds the buyers would necessarily attend. The meeting expressed firm opposition to pre-booking or preference of any sort.

Autumn Show. — The date was fixed for April 1. Despite light crops, a creditable display of fruit is assured: in addition the flower and vegetable sections should be of a high standard. Mr. F. Smith and the Secretary, will confer with Mr. G. J. Milne and will attend to flower section. Mesdames S. A. Cracknell, W. Smith and C. Harris, are to be consulted before submitting schedules for cookery, jams, jellies and ladies' classes generally.

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Doncaster. — Substantial quantity of Peaches were harvested in January, despite the damage wrought earlier by storms and hail. Early in the month the Anzacs were marketed, followed by Brigg's, Sweet Seventeen, Zerbe, Wiggins, and others. Prices, however, were low, from 1/- to 5/- per case.

Williams Pears are being harvested for local market and export. The Pear crop generally is satisfactory: clean where the approved black spot spraying programme has been faithfully carried out.

Bendigo. — Early Tomatoes realised 24/- a case: when heavy supplies came forward prices dropped to 8/- a case.

The Apricot crop was short, factory prices reaching 6/- a case.

Bacchus Marsh. — "Apple crops are shaping well here," states Mr. Geo. H. Anderson, manager of the Bacchus Marsh Packing Co. "There are nice crops of Jonathan, Dunns, Granny Smith, Romes, King David, etc." Twenty-two growers supply fruit for the Bacchus Marsh community pack: the attractive "F. Cave" label is used. A "Lightning" grader is installed. The high quality of the pack is seen in that prizes for the Colombie Apple Packing Competition have been consistently won. The fruit sells at a premium in England.

In some of the orchards the crops will be lighter than last year because of black spot, but on the whole there is a plentiful supply of good clean fruit showing.

In the Bacchus Marsh district the soil is rich. It is famous lucerne country: orchards are irrigated. One grower from a three-quarter patch of Apples, packed 770 cases of high quality export fruit.

PEARS FOR EXPORT.

Shepparton. — Packing commenced on January 21 at Shepparton of 8,000 cases of Williams Pears for shipment in the "Mongolia" on January 29. Immediately after picking the fruit was placed in cool store, at a temperature of under 40 deg. F. After packing, the fruit was placed in the cool chambers for 48 hours, and brought in ice trucks to the ship's side.

BROADCASTING.

Under the auspices of the Victorian Department of Agriculture, Broadcast talks will be delivered from 3AR from 6.15 to 6.30 p.m., as follows:—

Date (1935), subject and speaker:—

February 5—"Picking Fruit for Export and Storage," Mr. F. M. Read, M.Agr.Sc., Chief Inspector of Horticulture.

March 5—"Supervising the Export of a Fruit Harvest," Mr. E. Meeking, Senior Fruit Inspector.

March 12—"Preparing Assorted Preserves in the Home," Miss Knight, Fruit Preserving Expert.

SOUTH AUSTRALIA

Mid-Murray Notes.

BY the time these notes are in print we should be starting picking **Currants.** The crop of Currants is a particularly good one, which is evidenced by an occasional spur producing three big bunches of fruit. This seldom happens, we sometimes get two good bunches and a tendril bunch, but to get three big bunches is an indication of a heavy crop.

The Apricot crop

has been a good one, but ripening has been slow and peculiar. Owing to some peculiar phase of the season a great many Moorpark Apricots have ripened on one side even to a "mushy" ripeness, while the other side remained still green and hard. Although a certain amount of unevenness is always present with the Moorpark, in this season it has been so marked as to necessitate comment.

The prospect for **dried Apricots** is good, and anyone selling for a low cash price will regret it, buyers have been active, but in spite of their activities, the greater part of the pack will go through co-operative hands.

There is a growing demand for **Apricot kernels,** and instead of them going to waste as in many past years, they are now carefully saved up and sold to ready buyers. These kernels are exported overseas, and I understand are used for the manufacture of perfumes, flavoring oils, and prussic acid, and are becoming quite a worthwhile sideline.

We have had a bad visitation of grasshoppers in the flying stage during the past month or two, but as they confined their attention principally to grasses on channel banks and lucerne patches, no very great heed was paid to them. A few instances of damage to Prune trees by defoliation occurred.

The worst visitation on the River took place at Moorook, when a 14-acre **vineyard** was stripped almost bare of leaves. The worst feature of the visitation lies in the fact that millions of egg beds have been made by the grass hopper, and eggs deposited in every available space on drying greens, lucerne patches, and the abandoned blocks of Block E and Chaffey.

Hatching commenced about a week ago and a meeting was called by the Block E branch of the Agricultural Bureau, at which Mr. H. Newstead presided, to take steps to combat this nuisance. A committee was formed comprising Messrs. J. Price, H. Newstead, M. Pethick and O. Weste, to wait on the Irrigation Trust (working with growers as a District Council).

Immediate action followed, owing to the sympathetic attitude of the Irrigation Trust. Districts have been mapped out, Mr. F. Hooper taking Block A, Mr. Winder took Chaffey, Mr. Pettick Block E, Messrs. J. Archer and O. Weste Block C, J. Haines Block F.

Organising arrangements are in the hands of Mr. J. Price, who is acting as director of operations. Depots have been established for the distribution of poison bait, comprising bran, arsenite of soda and molasses, as recommended by officers of the C.S.I.R.

It is realised that unless steps are taken to eradicate them in the hopper stage no other method remains to combat it. No damage has as yet been done, but the fight is on.

Observations show that two distinct parasites work on the 'hopper, one on the adult and the other on the egg. The adult has been attacked by some parasite which develops maggots inside the hopper. The other is a small wasp about a quarter of an inch long, which lays its egg inside the hopper egg and lives on the embryo hopper until it is large enough to emerge from the hopper egg. On digging up egg beds it was found that the genuine hopper egg remains a pale creamy color, while that inhabited by the parasite is of a distinctly brown appearance.

Curiously enough, other countries in the Southern hemisphere have had serious visitations of grasshoppers, almost coinciding with our own: South Africa and the Argentine, as well as Australia.

The annual smoke social of the Renmark Fruit Growers' Co-operated took place on January 17, when over 300 members attended, as well as visiting members of co-operative societies and kindred societies from all along the River. Throughout the evening Mr. Jack Irving's orchestra gave many fine musical selections. The toast of "The Visitors" was given by Mr. C. S. Ruston, and responded to by Mr. C. A. S. Hawker (Federal Member for the district), and supported by Senator Duncan-Hughes.

Mr. Ruston paid a tribute to the two visiting politicians for the work they have done for the primary industry in Australia, saying that they were above the petty things in politics and were by their actions men of high principles who gave service instead of receiving it.

Mr. Hawker, in response, said that he had modified his views on control legislation in the dried fruit industry owing to the strong organisation of the industry, and by the quality of the men who ran the industry. Legislative agreements became necessary to the industry some eight or nine years ago, when voluntary agreements broke down. The good name of our products was Australia's best asset and as long as we supplied good quality goods and adopted good standards, there should be no fear of competition from outside countries.

Senator Duncan Hughes ably supported Mr. Hawker, saying that he entered politics as a tradition, being the fourth generation to enter Parliament. He came to these parts to see, hear, and learn something of the industry, as he believed that the prosperity of the land depended on the prosperity of the primary producer.

Mr. D. C. Winterbottom, general manager of the Mildura Co-op. packing shed, gave a racy description of his recent trip abroad on behalf of his company. His entertaining style kept the audience in a pleasant frame of mind throughout his address.

The speaker visited on several occasions the market of Eastcheap, the dried fruit market of London, where brokers and dealers were all confined in the one floor space, about 200 yards long, and spoke with enthusiasm on the work done by the Export Control Board with Sir James Cooper as chairman.

The toast of "The R.F.G. Co." was given by Mr. E. D. Sims, of Barmera, and responded to by Mr. H. D. Howie, chairman. Mr. Howie spoke about the activities of the Society and their experiment in withholding fruit from immediate packing. Although this necessity tied up a certain amount of plant, it has proved a distinct success, and would be adopted by a great many sheds this season.

There was no rush packing by this method, and it would hold stocks here instead of filling the London storage spaces. The company was building a large new steel concrete building capable of adequate future storage.

There was a distinct prospect of a rise in Sultana prices this year, provided we can send the right stuff, but we were still in the lap of the gods and it was to be hoped we would be able to successfully harvest the fruit now showing.

Mr. D. T. Du Rieu (chairman of Renmark Growers' Co-op. Distillery), in toasting the artists, mentioned that as the wine and dried fruits industry is closely related, there is a feeling of mu-

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tual good fellowship. A certain amount of rationing was necessary between these two activities to meet the demands of certain seasons, and only by a close co-operation can we get the best results for all concerned.

Many community songs were sung during the evening, and a happy crowd of growers filed out at 11 p.m.

The annual meeting of the Renmark branch of the Citrus Association took place on Monday, January 14. Mr. Jack Price occupied the chair, and had as speakers during the evening Mr. F. Metters, president of the association, Mr. C. Mueller, N.Z. trade representative, and Mr. Wicks, from Torrens Valley.

Mr. Mueller covered the year's operations in N.Z., and gave many useful suggestions where improvements might be made for the future. Pooling had proved entirely satisfactory owing to the strong co-operation with Torrens Valley, Salisbury and other Orange-producing centres. Mr. Wicks had been a tower of strength during his visit to N.Z., and it was gratifying for him to know that Mr. Wicks had seen the handling and marketing arrangements in that country.

He had a wish that more growers would find it possible to make the trip and go into the matter as thoroughly as Mr. Wicks had done. Ninety per cent. of the fruit and vegetables, said the speaker, were imported, as there was an ingrained belief of New Zealanders, that, owing to their dull climate, the fruit and vegetables grown in the country lacked a certain amount of health giving vitamins, and that Australia, with its strong sunshine, possessed these vitamins.

Mr. F. Metters said that in the past few years there was no direct departmental supervision of exports of Oranges, and that he would like to see the whole export regulations tightened up this year owing to the condition of a good deal of fruit exported to the United Kingdom.

Mr. Wicks gave his hearers a comprehensive review of his trip to New Zealand, and paid a high tribute to Mr. Mueller on the way in which he handled the N.Z. marketing situation, which was a very difficult one, owing to political pressure.

The whole trip was an eye-opener to him, and he is satisfied that we have the right man in N.Z. in Mr. Mueller.—"Nemo."

Cudlee Creek.

Mr. D. W. Hannaford, manager of the Cudlee Creek Co-operative Society and Cool Stores, passed through Melbourne on his way to Sydney during January.

Mr. Hannaford manages the cool stores referred to above and supervises the packing for all growers in Cudlee Creek and surrounding districts who are members of the Society.

The varieties of Apples grown in this district include: Cleos., Jonathans, Dunns and a few Romes. In a normal year the yield for the district is about 60,000 cases, but owing to severe hail storms this season the crop has been considerably reduced, and it is anticipated that the yield for the season will be about 40,000 cases. Of this quantity 22,000 will be exported to London and the Continent. The first shipment will leave Adelaide on March 1.

This district is particularly successful in the growing of good quality Cleo. Apples. The cool store has a capacity of 25,000 cases. In the packing shed 1,000 cases are handled daily. Some times more than this quantity is put through.

Pears are also grown at Cudlee Creek, and this year they expect to export about 600 cases of Williams Pears.

Gumeracha, writing under date December 1, Mr. J. B. Randell, Gumeracha, S.A., states as follows:—

In the areas affected last year by frost the blooming was very good, and setting also very satisfactory. In some orchards a considerable drop is reported leaving only a moderate crop on the trees in other orchards the outlook is for a heavy crop. In the areas unaffected last year by frost the blooming was generally of a lighter character in some cases scarcely any the general outlook is for about a 70 per cent. crop so far as the setting is concerned. A factor which has very adversely affected the position so far as export fruit is concerned is a visitation of hail from which very few orchards were exempt and this has left its mark on the Apples to such an extent that it is difficult at the moment to say with any degree of certainty just what amount of the crop in sight will be sufficiently free from hail blemish to be exportable; it is perhaps safe to say that about 50 per cent. of a normal season's exportable quantity will be available if no further unforeseen conditions arise to spoil the outlook.

Pears are relatively light a very considerable drop having occurred soon after setting Plums are heavy to very heavy. The recent late spring rains, which were of quite a bountiful character have made the prospects good for summer development of the trees.

Potato and Tomato planting are in full swing at present and a pretty large area is being planted to these crops.

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HEATY HOUSE, 499 LITTLE COLLINS ST. MELBOURNE.

Apple Crop Light.

Mt. Barker, S.A. (7/1/35).—Mr. E. S. Davidson writes: The prospects for the coming Apple crop are not bright, unfortunately. This is owing partly to the heavy crop last year during a dry season, which took a lot of the vitality out of the trees. Then we had most unseasonable weather during the flowering period which interfered with cross fertilisation. The bees were not able to carry the pollen as usual.

In this district and right through the Hills district the crop appears to be very light. Jonathans are very light in places, and these are often marked with black spot.

Dunns are also very light, and this is so all over the State.

All other varieties are light to very light, especially Romes.

Pears have set very well, especially Bosc and Josephine. Pears do not seem to have got into the rotation of light and heavy crops, as Apples have.

In this orchard—which is 101 acres, we are endeavoring to get our Apple trees out of the habit of rotational cropping which is so unprofitable.

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N.S.W. AGENTS: HERMANN HAEGE LTD., 379 Kent Street, Sydney. Phone: MA 5122.

New South Wales News and Notes

FRUIT FLY.

Gosford Grower Fined for Breach of Regulations.

THE FIRST PROSECUTION at Gosford under the fruit fly provisions of the Plant Diseases Act was successfully launched against Walter M. Robinson, fruit grower, of Mangrove Mountain. The district fruit inspector, W. B. Stokes, alleged that Robinson had neglected to clear his Mandarin trees of fruit before September 30. Stokes stated he visited the defendant's property on October 29 and again on November 12. Mandarins were still on the trees, and fruit fly was much in evidence. Of 19 Mandarins under one tree 12 were badly affected by the fly. The defendant pleaded that he had been too busy to pick the fruit himself, and had been unable to get the required labor. He was fined £2, with 8/- costs.

SYDNEY ROYAL SHOW.

The Royal Agricultural Society of New South Wales has just issued a particularly interesting brochure, printed on art paper and with many beautiful illustrations depicting the various scenes of activity on the Showground, especially during show-time.

The double page aerial view of the whole of the Showground is a special feature and gives an excellent idea of the magnitude of the Show visited by over 602,000 people during the 1934 Easter Exhibition. In addition there are many other photographs of interest to the country and city.

Reference is made to the Society's many and varied activities as well as the importance of field competitions conducted throughout New South Wales.

This brochure is being sent to all main agricultural and industrial centres throughout the world. A copy is also being posted to all leading commercial houses in Sydney.

Copies of this brochure may be had on application to the Secretary, Royal Agricultural Society, Sydney, N.S.W.

LIGHT VINTAGE IN N.S.W.

Owing to frost damage, the Grape crops of the Murrumbidgee Irrigation Areas will be light this season,—probably a 40 per cent. crop.

The Government Viticulturist, Mr. H. L. Manuel, states that the season has been one of the wettest on record, causing fungus diseases to develop.

In the Hunter River district conditions for Grape production have been more favorable. It is estimated that the wine production for the State will be about 950,000 gallons.

Severe Hailstorm Losses.

Bathurst.—During recent hailstorms a number of growers lost 90 per cent. of their crops. A committee was appointed from the Bathurst Fruitgrowers' Association to investigate, and as a result, it is expected an application will be made to the Government for a grant. With some growers the position is so serious that without assistance they will be forced to relinquish their properties.

Much Hail Damage.

Capertee (11/1/35).—Owing to abnormal hail visitation it is difficult to estimate quantities of marketable fruit. It cannot be estimated whilst on the trees; it is only when it gets to the grader that the real damage is disclosed. What promised to be a good crop has dwindled to an unknown quantity.

The fruit set fairly heavily, but there was a heavy shedding, then came hail: every cloud with rain also carried hail. This seems to have been general. This immediate locality had its share, mostly lighter hail.

If nothing further happens to it, there will be a very moderate quantity of fruit sent from Capertee. **Pears.** — W.B.C., Coles, Packham, Nelis. **Apples**—Jonathan, G. Smith, Romes and Five Crown principally.

Most Apple growing districts in New South Wales have suffered from hail.

New Co-operative Company in N.S.W.

Activity at Griffith, Murrumbidgee Irrigation Areas.

THE Griffith Fruitgrowers' Co-operative Co. Ltd., was recently registered in N.S.W. The directors are Messrs. M. Couch, J. Holroyd, W. D. Bull, L. M. Savage, J. Davies, H. L. Matheson, and J. E. Ward, with Mr. C. S. Connor as Secretary.

At the inaugural meeting, many of the most successful growers were in attendance, the districts represented being Griffith, Yoogali, Bilbul, Beelbangera, Hanwood, Tharbogan, Ballingall and Lakeview.

Mr. J. E. Ward states that the formation of this company had been in the minds of a large number of fruitgrowers for a long time. During the past year the need was so obvious that the company was organised. One of the principal aims will be the fostering of self-reliance and greater efficiency on the part of the individual grower, whilst at the same time providing an organisation giving all facilities for co-operation in matters of mutual benefit and the taking of united action on all matters of common interest.

"Regarding trading and marketing activities, full advantage will be taken of

existing channels of trade.

There is a fallacy that co-operation eliminates the middleman; what is done is to replace private business units by co-operative units. Where a co-operative company carried out a service with no advantage, and at perhaps, greater cost than can be done otherwise, it does certainly assist in the building up of an institution or 'home,' but it does not put anything in the pockets of its shareholders. The policy being 'more nett profits to the growers,' the company will not undertake any particular service for

Growers should get into touch with Empire Produce Exports.

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its members unless some definite advantage is gained.

"The company will collaborate with any other concern, private, proprietary or co-operative, for co-ordinated action which is likely to benefit members of the company as a body.

"No obligations will be undertaken which are likely to embarrass the company by being ahead of its development in adequate accommodation and financial facilities.

Canning Factory Proposal.

"Many propositions and offers have already been made to the company which are being examined closely by the directors.

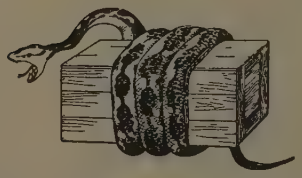
"One of the objectives of the Griffith Fruitgrowers' Co-operative Society is to have a canning factory erected in Griffith, and certain negotiations are now being closely investigated."

The Cocktail Era.

He: "I hope you won't be the kind of wife whose only utensil is a tin-opener."

She: "No, I'll use a corkscrew, too."

PYTHON



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Plant Pests and Diseases

Huge Losses are Caused Annually

CO-OPERATION NEEDED BETWEEN PRACTICAL GROWERS AND SCIENTIFIC WORKERS.

QUARANTINE EMBARGOES JUSTIFIABLE ONLY ON BIOLOGICAL GROUNDS.

(By Dr. R. J. Noble, Government Biologist, N.S.W. Dept. of Agriculture.)

THE MENACE OF PLANT DISEASES formed the subject of a valuable address recently by Dr. R. J. Noble, Biologist, N.S.W. Department of Agriculture.

The lecturer said that the 1916 outbreak of wheat rust caused a loss of £2,000,000: there was also extensive damage in 1930. Downy mildew caused a loss of £40,000 to N.S.W. vine growers in one season. Losses from Irish blight of Potatoes and Tomato wilt were enormous.

In some instances, spraying for control represented 30 per cent. of the cost of production.

Spraying to protect Apple and Pear crops in the Eastern States of Australia cost around £900,000 annually.

Virus Diseases.

The facts in relation to the bunchy top disease of Bananas, continued Dr. Noble, are still quite fresh in our minds. In 1922 about 5,000 acres were planted to Bananas in N.S.W., but owing to the development of bunchy top the area was reduced to 1,500 in 1925, and now, after elucidation of the disease and the development of suitable control measures, there are 22,000 acres under cultivation. At one time bunchy top had practically annihilated the Banana industry—650,000 bushels were produced in N.S.W. in 1922, and this figure fell to 91,000 in 1925. The disease is caused by an infective agency which is present in the sap of diseased plants, and which is termed a virus.

"Other virus diseases are woodiness in Passionfruit, Mosaic in beans, leafroll in Potatoes, and spotted wilt in Tomatoes. Sometimes I think we are on the edge of a volcano."

Fortunately, stated the lecturer, bunchy top of Bananas was not carried over in unrelated plants.

Many garden plants, including Dahlias, Poppies and Nasturtiums, were severely affected with virus, and, as these transferred readily to cultivated food crops, every effort should be made to clean up all sources of virus infection.

Plant Quarantine on Sound Lines.

The importance of plant quarantine should not be overlooked.

"In 1924," concluded Dr. Noble, "I drew attention to what were serious weaknesses in this respect, and suggested the formation of a group of plant specialists who would advise the Federal authorities in respect of the measures necessary to protect our crops by the formulation **of measures based on the biological facts of each situation, while at the same time avoiding the danger of placing unwarranted restraints on trade.**

"A Federal director of plant quarantine was appointed in 1927, but an advisory group was called to service only this year (1934) in respect of the fireblight and citrus situations. I had discussed the menace of fireblight in the report published in 1924, and recently again at the Fruitgrowers' Conferences in Sydney, when views expressed ten years ago were reaffirmed.

"In the meantime, large quantities of maize have been introduced from Java and South Africa, with the menace of serious mildews and the worst maize disease known, American Maize smut. Rice crops are protected by a customs duty only, yet there are 60 known diseases affecting this crop. Departmental inspectors had seized and destroyed introductions with new diseases. With vegetable seed the position was still serious, —Tomato wilt, bacterial blight of Beans. Several of the worst bacterial and fungoid diseases had only been recorded during the past three or four years.

"Without being an alarmist, I have indicated the need for farmers and fruit producers, and all interested in crop production to adopt measures to reduce the incidence of crop disease; further, to do what they can to assist the department in its representations to ensure that more adequate protection is provided against the menace of introduction of diseases from abroad."

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Apples, Peaches, Pears, Plums, Apricots, Citrus, etc., packed and despatched to all parts of the World.

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Cold Storage In Australasia

The Storage and Ripening of Fruit.

With Particular Reference to William Pears.

Correct Maturity at Picking Time Necessary. Pears, Peaches, Plums, Apricots and Passionfruit Ripen Normally After Picking at 65 Degrees F.

Overstored Fruit Will Not Ripen Properly.

(A paper prepared by S. A. Trout, M.Sc., D.Ph., Research Officer, C.S.I.R. (Food Preservation Section), in collaboration with G. B. Tindale, B.Ag.Sc., Cool Storage Officer, Department of Agriculture, Victoria, and read by Dr. Trout at the recent Congress of the Australian and New Zealand Association for the Advancement of Science, Melbourne, January 21, 1935.)

UNDER DISCUSSION to-day is the subject, disease and ripening. What do we mean by these terms, disease and ripening?

The disease for each variety of fruit has been classified, and we hear such terms for Apples as bitter pit, brown heart, water core, low temperature breakdown, Jonathan spot, scald; for Pears, core breakdown, mealiness and scald, and for Oranges skin browning, etc.

All such diseases, however, are physiological, and represent in some cases desiccation of cells, in other cases rupture of the cell walls in various parts of the fruit tissue, viz., the epidermis, vascular bundles, in the pulp or in the region of the core.

What causes these diseases is as yet, in many cases, unknown, for the factors involved are varied and numerous.

Physiological diseases are in general related to growing conditions (soil, climate, stock, etc.), physiological condition of the fruit at the time of picking, and storage conditions, such as temperature, humidity, and the composition of the surrounding atmosphere in relation to the carbon dioxide content and percentage of volatile products of metabolism.

In these days of scientific development one must attempt to solve firstly the problems of

major commercial importance,

and it is for this reason that chief attention has been directed towards the **Williams Bon Chretien Pear.**

This article by Dr. Trout is of commercial importance to the fruit industry.

Fruit must be picked at the right stage of maturity in order to ripen properly with full flavor and juice.

The best temperature for ripening Pears is 60-65 degrees F: This applies also to Peaches, Plums, Apricots and Passionfruit.

Pears cool-stored at 32 degrees to 36 degrees F. ripened normally when removed at 65 degrees F.

Overstored fruit will not ripen properly. The marketable cool storage life is less than two-thirds of the length of time the fruit will remain in cool store in sound condition.

Lack of knowledge on these points is unnecessarily costing Australia thousands of pounds sterling.

The theory that Grapes, Oranges and non-starch fruits will not ripen off the vine or tree has been disproved. Certain conditions as to maturity at picking time and temperature for ripening, however, are necessary.

Huge losses have been incurred in the storage and transport of this variety of fruit, mainly through scald, core breakdown and mealiness. These diseases have been regarded in the past as diseases of abnormal ripening, and simply left at that. No attempt has been made to show how they are related to the ripening process, or what are the characteristics of normal ripening. Actually very little is known about ripening, as research in this direction has been neglected.

On the tree the ripening process is characterised by changes in the appearance and the physical condition of the fruit, viz., increase in size, change in color of the seeds, development of color and progressive softening of the fruit.

In most fruits, e.g., Peaches, Plums, Apricots, Grapes, Oranges and Apples, the ripening process proceeds to completion on the tree with the full development of flavor and juice. The normal ripening process, however, only takes place in fruits grown in their natural habitat for in some localities the trees will bear fruit which undergoes all the ripening change except that of the full development of flavor and juice. The development of flavor and juice is intimately related as fruits lacking flavor invariably lack juice.

Some fruits, however, e.g., Pears, in some seasons, and Bananas, will not ripen on the tree even in a natural habitat, but must be removed from the tree for normal ripening to proceed.

Whilst these fruits will not ripen on the tree, it does not necessarily follow that fruits which ripen on the tree will not ripen off the tree.

It has been and still is, a generally accepted theory that non-starch fruits like the Grape and the Orange, will not ripen off the tree, but our experiments during the last three years have disproved this theory, and as yet we have been unable to find any Victorian-grown fruits which do not ripen off the tree.

Indication of the presence of starch is of no value in predicting what course the ripening process will take. Pears and Apples may contain the same amount of starch, but will behave quite differently. Pears containing no starch ripen with the same development of full flavor as those containing large quantities of starch.

The great distinction between fruit which will not ripen on the tree and that which will ripen on the tree is that the latter will only ripen off the tree under much more critical conditions, for whereas Pears in which the ground color of the fruit is green will ripen with full development of flavor and juice, Apples of a similar maturity never develop full flavor and juice off the tree. In the former the picking time can be extended over a fairly wide range in which the color of the fruit may range from green to green yellow. In the latter, however, great attention must be given to the

maturity of the fruit

at the time of picking, and the fruit must be picked just prior to full maturity. Fruit picked earlier than at the optimum picking time undergoes all ripening changes except those responsible for the development of full flavor and juice.

Whilst ripening is dependent on the physiological condition of the fruit at

the time of picking, it is also dependent on temperature condition off the tree, for just as there must be optimum natural conditions, so must there be optimum artificial conditions. Most people are now cognisant of the fact that there are certain optimum ripening conditions for Bananas, but it is not generally recognised that there are optimum ripening conditions for every variety of fruit, and much of this data has yet to be determined.

Our experiments have shown that 60-65 deg. F. is the optimum ripening temperature for most varieties of Pears, especially the Williams variety, for Peaches, Plums, Apricots, Passionfruit.

In some cases the ripening process will proceed outside this temperature range, but not with the same development of flavor and juice that characterises the ripening at 60-65 deg. F. In other cases the ripening process does not operate at all outside this temperature range.

I have assumed in all these cases that the fruit is ripened immediately after it is picked. Most fruits, however, are

usually cool stored

immediately after they are picked, and are allowed to remain in cool store for periods varying from one day to twelve months, according to marketing conditions, and also to the variety of the fruit.

Does the length of time in cool store affect the physiological condition of the fruit, and thus influence the ripening process when the fruit is removed from cool store to the optimum ripening temperature?

This phase of the question has been studied very fully by the investigators during the last three years with several varieties of fruits, but especially with the William Pears.

The changes which take place throughout the cool storage life of the fruit, and also in the fruit on its removal from cool store to the optimum ripening temperature have been studied by physical and chemical measurements.

Changes in color were noted and compared with a color chart composed of the colors of green, yellow and grey. Softening of the fruit was determined by measurements of the resistance of the fruit to the penetration of a plunger of a standard American pressure tester. The respiratory activity of the fruit was measured at constant temperatures of 32 deg and 36 deg. by determining the daily rate of CO_2 output. Chemical analysis of acid, sugar, reducing and cane, acetaldehyde and alcohol were made.

The fruit was stored at 32 deg. and 36 deg., and removed at weekly intervals to cabinets maintained at temperatures of 45 deg., 55 deg., and 65 deg. respectively.

It was found that normal ripening with the full development of flavor and juice only occurred at 65 deg. F. At 55 deg. the fruit softened, but did not develop full flavor and juice, and at 45 deg. the fruit remained hard and then finally scalded. The temperature of 65 deg. was therefore the optimum ripening temperature.

Fruit removed from 36 deg. to 65 deg. up to the end of the seventh week ripened normally, but fruit removed one week later ripened but without the full development of flavor. Fruit removed at the end of the ninth week ripened, but without full development of flavor and juice.

Such a phenomenon is usually classed as a disease of mealiness.

Later removals to 65 deg. were characterised by core breakdown and then scald. The fruit scalded in store just after this period. The results at 32 deg. were analogous to those at 36 deg., except that normal ripening ceased after the fruit had been in store twelve weeks, whereas fruit stored at 36 deg. failed to ripen normally at 65 deg. after seven weeks' cool storage.

These physiological diseases of mealiness, core breakdown and scald, are undoubtedly associated with the metabolism of the fruit in store, and in this connection the measurement of respiratory activity is of great value.

Color Change.—At the time of picking the color is deep green, and at climac-

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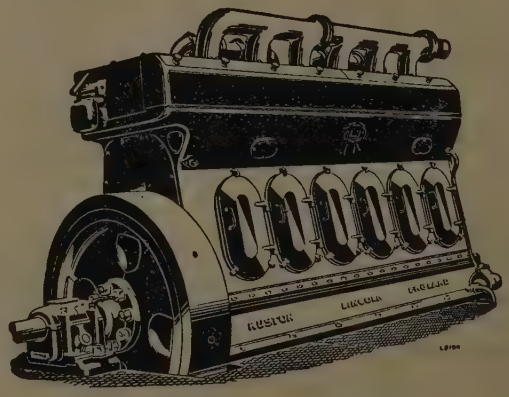

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teric deep yellow. Disappearance of green marks end of storage life.

Pressure.—Records of resistance to penetration are of little value as there is no appreciable softening till general breakdown appears in store. During ripening pressure falls from 30 lbs. to 3 lbs.

Conclusion. — In the progress of the fruit towards senescence there is a gradual change in the physiological condition of the fruit and eventually a stage is reached when the condition of the fruit is unfavorable for normal ripening. At this stage we may regard the storage life of the fruit from a practical and commercial viewpoint as being over.

Physiological diseases are associated with the storage and ripening of William Pears only after the marketable storage life is over and are therefore diseases of over-stored fruit. I have used the term marketable storage life to denote the maximum length of time fruit can be kept in cool store and still ripened normally when removed from cool store to optimum ripening conditions.

The marketable cool storage life is less than two-thirds of the length of time fruit will remain in cool store in sound condition.

Ignorance of this fact and the fact that each variety of fruit has its own allotted span is unnecessarily costing Australia thousands of pounds for the greatest losses in the marketing of cool stored fruit are due to diseases

of over-stored fruit

In this category is also included the enormous wastage in citrus fruits through mould. In most instances mould only makes its appearance in over-stored fruit.

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The Cool Storage of Grapes.

By Willis J. Williams, F.C.S. (London), Supt. of Markets, Sydney.

GRAPES, although having a tender skin, are very suitable for cool storage, and for export. The fruit should be handled very carefully at the vineyard during picking and transport. Transfer to cool conditions immediately after picking. Avoid picking in the rain; also keep the fruit dry during transport to packing shed. For cool storage be careful that the cases themselves do not become damp. Dampness is a primary cause of mould.

Methods of Packing.

Tests were made with Grapes in granulated cork, woodwool or wrapped in sulphite paper (two sheets), with each variety: without any packing at all, the results were unsatisfactory.

It was found that Grapes in granulated cork kept in best order for the longest period.

Grapes packed in double sulphite paper appeared to keep a little longer than when packed with woodwool: but it was definitely proved that the keeping quality of the various varieties was not assisted to any great extent by being kept in the sulphite paper.

Granulated cork costs more, but the cost is more than made up by better results: further, with this packing, the fruit is handled less—a distinct advantage.

Experiments showed that fruit from wet districts in Queensland near the N.S.W. border did not keep nearly so well as fruit from the dry climate around Leeton.

Pre-cooling.

Grapes should be pre-cooled for two days at 50 deg. F., whether for shipment or cold storage.

The foregoing tests covered eleven varieties of Grapes and three methods of packing.

Further details next issue.

— THE —

BAVE-U

Power Sprayer

— SINGLE ACTING MODEL —

This machine is thoroughly reliable and sturdy, and will supply two hoses at any desired pressure It is moderately priced and represents the — best value on the market to-day. —

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WESTERN AUSTRALIA.

High Quality of Export Apples Advocated.

Appreciation for W.A. Apple Sales Board.

Bridgetown.—The varieties grown here consist largely of Cleos., Dunns and Jonathans. Several growers are working over Romes, as unprofitable, as this variety is now, some years ago it commanded a good price on the local market when the Jonathans were finished.

Few growers exported any late varieties last season having made such losses in the preceding year sending Yates, etc., to London, the result being that the amount in the State for the local market far exceeded the demand.

By organised marketing by the Apple Sales Board, prices were maintained better than one would have expected, and by its Publicity Campaign more people appear to be buying Apples.

The remarks in your November issue on the change of the names of grades of export fruit was of interest to me, particularly to the reference to "plain" grade.

If my resolution at the meeting of the Australian Fruit Council in 1924 had been carried there would not have been a "plain" grade, as I said then and say now, it tended to reduce the standard of Australian fruit.

After ten years, other States have apparently come to the same conclusion, and my contention is that had we raised instead of lowering the quality of our fruit then, there would have been a far better demand for our Apples overseas than there has been of late.

It is so easy to lose a market and a good name, but so hard to regain either.

There was a very well attended meeting here to receive the report of our two members of the Apple and Pear Council, Messrs. J. McN. Martin and G. Simpson, on what happened in Sydney at the last meeting.

Growers were told by both that the only chance for the industry was the raising of the standard of fruit exported.

The Westralian Farmers Ltd. has decided to start a central packing shed, and has already had offers for more fruit than it can cope with this season.—Owen Sparks.

DRIED FRUITS — NEWS AND NOTES

DRIED TREE FRUITS

Meeting of N.S.W. Dried Fruits Board.

Clean Bags Usable for Delivery to Packing Houses of Dried Tree Fruits :: Only Sweat Boxes for Dried Vine Fruits.

AT THE MEETING of the N.S.W. Dried Fruits Board, held in Sydney on January 16 and 17, 1935, there was a full attendance of members, namely Messrs. G. J. Evatt, chairman and Government nominee; E. J. Hudson (Yenda), L. B. O'Donnell (Curlwaa), T. Steele, M.L.C. (Young), and P. Cox (Griffith).

The board decided to extend during the 1935 season to dried tree fruit packing houses the practice which has been adopted in the past of having inspectors in attendance at the dried vine fruit packing houses.

It will be permissible to deliver dried tree fruit to packing houses in bags, provided the bags are clean and sound, and have been sterilised or fumigated. Sweat boxes, however, will have to be used for dried vine fruits.

With regard to the delivery of dried tree fruits from packing houses to merchants and others for placing in cellophane packets, it will be necessary for the dried tree fruits to be packed at the packing houses in accordance with the regulations, i.e., in

(a) clean new cases constructed of well seasoned soft wood or hardwood that has been smoothed, sawn or dressed; or

(b) clean new corrugated cardboard containers.

These containers must be branded with the name and address of the packer or his registered brand and the name, quality and size and grades and net weight of the fruits. There is no regulation in relation to the weight of fruit which is to be included in each container. All that is necessary in connection with the weight is as before indicated—for same to be placed on the outside of the container.

The contribution by growers to the New South Wales Dried Fruits Board towards the cost of defraying the expenditure of administering the Dried Fruits Act and carrying out the duties and functions of the Board was reimposed at 1/32d. per pound on both dried tree and dried vine fruits.

DRIED STONE FRUITS

New Season's Prices.

Prices of new season's Apricots, Nectarines, and Peaches have been declared by the Australian Dried Fruits Association. In accordance with the new regulations prescribed by the Department of Commerce, the fruit is classified as "fancy," "choice," and "standard." Comparing the prices with those declared at the commencement of last season on the basis of choice fruit, Apricots are 1d. per lb. dearer, 4-crown Peaches are down ½d., and 1-crown ½d. higher. The following prices have been fixed:—

Apricots.

28-lb. Boxes.	Fancy	Choice	Standard
Four-crown . .	1/1½	11½d.	10½d.
Three-crown .	11½d.	10½d.	10½d.
Two-crown .	10½d.	10½d.	9½d.
One-crown . .	—	9½d.	8½d.

Nectarines.

Four-crown .	10½d.	9½d.	9½d.
Three-crown .	9½d.	9½d.	8½d.
Two-crown . .	8½d.	8½d.	7½d.
One-crown . .	—	6½d.	5½d.

Peaches.

Four-crown . .	10½d.	9½d.	9½d.
Three-crown .	9½d.	9½d.	8½d.
Two-crown . .	8½d.	8½d.	7½d.
One-crown . .	—	6½d.	5½d.

The prices of Apricot slabs is 9½d. per lb., and plain grade 8½d.; plain Nectarines, 5½d.; Peaches, slabs, 5½d., and plain grade 5½d. per lb. Prices determined for all grades are in the capital cities and producing centres.

The crop of Apricots will be lighter than that of last year, and indications are that the Peach crop will be smaller. The outlook for a good demand for dried stone fruits is promising. The light American crop and damage to the crops by frost in South Africa are favorable features in the market. The London market is offering an attractive outlet for supplies.

PREPARING FOR NEW SEASON.

The Department of Agriculture has already notified all dried fruit operators that packing sheds must be cleared and cleansed before the new season's crop is ready. Sweat boxes and all receptables used in the handling or transport of fruit must be sterilised before operations begin. This is most effectively done by steeping them in boiling water. All sheds must be free from grubs and have been "spring-cleaned" before deliveries are accepted. Growers are advised to steep their hessians in boiling water at least a week before using them.

BERRI REPORTS SUCCESSFUL YEAR

Extensions Necessary.

The annual report of the Berri Co-operative Packing Union Ltd., presented by the chairman (Mr. A. P. Wishart) recently, discloses a satisfactory and record year just past.

The pack was 464 tons higher than the previous best year and progress payments were £23,000 higher than for 1933, with trading in the store £6,000 more than in 1933.

£13,238 was distributed to members as interest on share capital, rebates and allowances, and many new producers have become share-holders. An extension to and re-arrangement of the plant became necessary during the year. A new engine-room and workshop has been added and the main packing shed extended whilst it is proposed to extend the citrus shed another 60 feet. Two

GOODMAN'S FRUIT TREES
Success in 1935
and thereafter . . .
Comes to the Fruit Grower who plants a Goodman Orchard!
Quality Trees — backed by over 44 years' expert knowledge and experience—yield bumper crops of First Quality Fruit, which brings highest prices in every market!
(W-McF.)
Reliable trees sent any distance. Write for Catalogue.
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Liverpool.

Hull
Northern Fruit Brokers Ltd.,
WHITE & SON HULL Branch,
Humber Street, Hull.

Manchester
Northern Fruit Brokers Ltd.,
NORTH OF ENGLAND Branch,
Commercial Sale Room,
Deansgate, Manchester.

Newcastle
WHITE & LEATHERLAND,
St. Andrew's Street,
NEWCASTLE.

Cardiff
MORGAN, WHITE & CO.,
Cardiff,
WALES.

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VICTORIA:
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Broken Hill Chambers,
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NELSON.

large sorting belts will be added, and further sweating boxes installed. A new 30-ton grader is to be added in the citrus shed, and an automatic feeder to speed up the handling of tree fruits.

To lessen fire risks, the extensions will be carried out in reinforced concrete, and additional chemical fire extinguishers provided, considerably lowering insurance costs.

Increased turnover in the co-operative store, which amounted during the year to £44,589, has allowed a continuance of the usual rebates.

SALES OF AUSTRALIAN DRIED FRUIT.

Following on the substantial demand evidenced since the Christmas vacation, sales of Australian dried fruit in Great Britain recorded with the Agency of the Commonwealth Dried Fruits Export Control Board during the week ended January 17, amounted to 1,089 tons of Sultanas, the average price of which was £35/13/1.

The quantity of Sultanas unsold or afloat in Great Britain is now reduced to 5,099 tons. In view of the fact that new season's Sultanas will not be available in Great Britain until the beginning of May, there appears to be every likelihood that there will be no carry-over of Australian Sultanas, and that the new season's fruit will reach an empty market.

The total shipments of Australian fruit to Great Britain during the past season amounted to 34,340 tons, to Canada 14,433 tons, to New Zealand 3,335 tons, and to other markets 910 tons, the total exports amounting to 53,018 tons.

DRIED FRUITS FREIGHTS

Reductions Sought.

A special committee selected from the Mildura Chamber of Commerce and the Australian Dried Fruits Association, is giving earnest consideration to the preparation of a case for the reduction of rail freight on dried fruits.

It is felt that a freight reduction is imperative, and every effort will be made to secure this end.

THE THOMPSON SEEDLESS GRAPE.

A Californian paper recently announced the death of George Thompson, of Sutter County, who, with his father, developed the Grape which bears his name. Although born in England 94 years ago, Mr. Thompson had long been engaged in Grape production in California.

The Thompson Seedless Grape is now the most largely used and best accepted of the big Californian Raisin Grape industry. It was originally brought by William Thompson to Sutter County in 1872, through purchase from a nursery firm in New York State, under the name of "Lady de Coverley," a name by which it is known in English hot-houses. The Grape was first distributed by the Thompsons, under the name of Thompson's Seedless, to distinguish it from the Sultana, a somewhat similar seedless Grape which was then (and still is) being grown in California. The Sultanas (as called in California), however, is a declining and the Thompson Seedless an increasing production. The Thompson Seedless is actually the Sultanina and is so known in the Eastern Mediterranean and Asiatic countries where it is produced, the name being derived from the town of Soultanieh, in Persia. It is the variety referred to in the trade in such countries as "Sultanas."

The present extensive planting of the so-called Thompson Seedless Grape or Sultanina began in the San Joaquin Valley in about 1910 and soon outdistanced the Muscat acreage as a Raisin Grape. California now has about 530,000 acres planted in Grapes, of which about 240,000 acres are of Raisin varieties and about 150,000 acres of the latter are in Thompson Seedless Grapes—over half of which are in Fresno County. — ("Sunraysia Daily.")

PORT of LONDON

The World's Best Fruit Market

Sales can always be depended on for best quality fruit at highest prices.

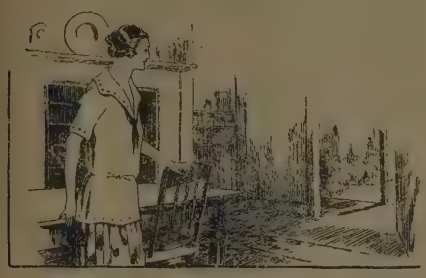
Besides its own vast population, LONDON supplies the seaside resorts. Tourists make their headquarters in LONDON and want the best fruit.

LONDON has always been the centre of the Australian and New Zealand fruit trade, and although many efforts have been made to divert it to other ports, the presence of its huge local market with expert distribution agencies will ensure it remaining so.

LONDON is an **INTERNATIONAL** MARKET where the WORLD'S BUYERS congregate, and where the highest prices for best produce are always obtained.

All particulars as regards charges, etc., can be obtained from:

Capt. A. W. Pearse, Port of London Authority, **Frazer House, 22 Loftus Street, Sydney.**



Home Notes

and Recipes.

Jellied Meats.

Timbales of Lobster and Cucumber.

1 tablespoon gelatine, 3 tablespoons cold water, 1 cup boiling water, 2 tablespoons lemon juice, 1 teaspoon vinegar, ½ teaspoon salt, ¼ teaspoon white pepper, 2 cups boiled lobster meat, 1 cup chopped cucumber.

Soak gelatine in cold water, dissolve in boiling water. Add vinegar, Lemon juice, salt and pepper. Cool. Flake lobster meat fine, and add to chopped Cucumber. Stir into gelatine mixture with more Lemon juice if desired. Pour into individual moulds and thoroughly chill in refrigerator. Serve on crisp Lettuce leaves and garnish. Serves 6.

Chicken and Ham Entree.

1½ tablespoons gelatine, ¼ cup cold water, 2 tablespoons butter, 2 tablespoons flour, 1 cup milk, salt, pepper, ½ teaspoon Onion juice, 1 cup chicken finely chopped, 1 cup ham finely chopped, 1 cup whipped cream.

Soak gelatine in cold water. Melt butter, add flour and mix well. Add milk gradually and bring to boiling point, stirring constantly. Add salt, pepper, Onion juice and gelatine. Fold in chicken and ham. Cool. When mixture begins to thicken, fold in whipped cream. Turn into wet mould and chill thoroughly in refrigerator. Serve on crisp Lettuce leaves. Serves 6 to 8.

Entrees.

Any cold meats of fish may be prepared the same as chicken and ham.

Cold Meat Scapan.

Slices cold beef, lamb, or fowl; 2 dessertspoons gelatine, 2 tablespoon ham chopped, 2 hard boiled eggs, 2 cups stock, chopped Parsley.

Arrange slices of egg around mould and sprinkle Parsley between. Heat stock and add soaked gelatine. Stir in chopped meat and ham. Turn into mould with egg in to set. Chill in refrigerator. Serve with salad.

Beetroot Mould.

2 dessertspoons gelatine, 2 average-sized Beet, 1 small Lettuce, 1½ cups hot water, ½ cup vinegar, pepper, salt and sugar to taste.

Cook Beet till tender, peel and cut into slices. Line a fluted mould with slices, then fill centre with small diced pieces of beet. Dissolve gelatine in hot water, add vinegar, pepper, salt and sugar. Pour over Beetroot and set in refrigerator. Garnish with shredded Lettuce and sliced Tomato.

Frozen Tomato Soup.

1 tin Tomato soup, equal quantity water, half tablespoon gelatine.

Heat the soup and water together to boiling point, and stir in gelatine soaked in cold water. Cool thoroughly and freeze. Serve topped with slightly salted whipped cream.

* * *

The following recipes have been prepared by Miss A. E. Allen, Electrical Demonstrator of the State Electricity Commission of Victoria:—

Strawberry Icecream.

1 box Strawberries, ½ pint cream, ½ cup sugar. **Method:** Take tops off Strawberries and mash through coarse sieve or colander. Whip cream and sugar stiffly and add to it the Strawberry pulp. Stir well. Pour into refrigerator trays (without divisions) and freeze, stirring occasionally.

Orange Water Ice.

1 cup sugar, 2 cups boiling water, 2 cups Orange juice, 4 tablespoons Lemon juice. **Method:** Dissolve sugar in boiling water, and boil for five minutes. Add strained fruit juices, cool and pour into refrigerator trays (without divisions) to freeze. Stir occasionally.

Banana Mallow.

18 Marshmallows, 2 teaspoons Lemon juice, ½ cup boiling water, ¾ cup mashed Banana, ½ pint cream. **Method:** Melt Marshmallows in boiling water. Add the Banana pulp and Lemon juice. Cool. When quite cool and slightly thickened, combine with cream which has been stiffly beaten. Pour into refrigerator trays and freeze—without stirring.

Egg Flips.

3¾ pints of milk, 1½ ozs. cornflour, 1½ teaspoons vanilla, 4 ozs. sugar, 2 eggs. **Method:** Beat eggs with sugar and a little milk. Mix cornflour with a little warm water. Boil remainder of milk—add cornflour—boil two minutes. Cool slightly and pour on to eggs, beating well. Add vanilla. Pour into refrigerator trays, leaving in divisions. Grate nutmeg on the top and freeze.

Chocolate Souffle.

1 pint milk, ½ cup cocoa, ¼ cup sugar, 2 teaspoons gelatine, 2 eggs, vanilla. **Method:** Warm milk and pour over sugar and cocoa. Return to saucepan and bring to the boil. Stir in gelatine blended with a little cold water. Boil for two minutes. Cool slightly. Add beaten egg yolks. Allow to become quite cold. When just beginning to set, fold in stiffly beaten egg whites, half at a time. Pour into serving dish and decorate with chocolate shot. Chill in refrigerator.

Lemon Snow.

1 pint water, 4 tablespoons arrowroot, rind and juice of 2 Lemons, 8 tablespoons sugar, 2 egg whites. **Method:** Blend arrowroot with a little cold water. Add rind to remainder of water and bring to boiling point. Stir in arrowroot. Cook for 2 minutes. Remove from element, add sugar and strained Lemon juice. When quite cold, stir in stiffly beaten egg whites, half at a time. Pour into wetted mould decorated with slices of Lemon. Place in refrigerator to set.

Banana Shape.

Ladies' fingers, 6-8 Bananas, Lemon juice, 1 packet Lemon jelly, ½ pint cream. **Method:** Make Lemon jelly. Place in refrigerator and when semi-set, take out and whip. Then fold in beaten cream and Bananas, mashed with salt and Lemon juice. Decorate mould with Ladies' Fingers. Pour in mixture and place in refrigerator to set.

Passionfruit Cream.

12 Passionfruit, 1 Lemon, ½ oz. gelatine, 2 oz. castor sugar, red jelly, 1 gill cream and ½ pint milk, or 1 gill milk, ½ pint cream. **Method:** Soak gelatine in milk for half an hour. Remove pulp from the fruit and take out the threads. Add Lemon juice and sugar. Whip cream until thick. Dissolve the gelatine, allow to cool slightly, then add to the cream. Add fruit and allow to become nearly set, stirring occasionally to prevent the fruit from sinking. Pour into wetted mould, place in refrigerator and allow to set. Turn on to a glass dish and decorate with chopped red jelly.

HELPFUL HINTS FOR THE HOUSEWIFE.

Before washing-up, housewives will find that half a teaspoon of olive oil rubbed into the hands will help to keep them in good order. Repeat the treatment, and wash in hot soapy water after the housework is finished.

Oysters should only be warmed through, as when overheated they become tough and indigestible.

Motor Cars and Trucks

Useful Hints

SAFETY FIRST.

The Christmas and New Year holiday season was responsible for far too many motor accidents, many of which could have been prevented by drivers using more care. The National Safety Council gives the following good advice to tourists:—

Drive as you would like the other fellow to drive.
Guard against errors of others.
Regulate your speed according to all the circumstances.
Exercise extra caution at intersections.
Keep well to the left side of the road.
Make sure it is safe before overtaking.
Exercise discretion and consideration in the use of the horn.
Give hand-signals correctly, clearly, and in ample time.
Avoid needless inconvenience to others when changing direction or reversing.
Conform suitably to police and traffic signals, danger signs, and to the warning signals of other road users.
Avoid "dazzling" other road users.
Park your vehicle so as to cause the minimum inconvenience to other road users.
Keep your vehicle in efficient mechanical condition.
Be certain you are physically fit when driving.
Appreciate the courtesy accorded by others.
Always remember that the safety of the public comes first.

Rest in Peace.

They're pickin' up the pieces,
With a dustpan and a rake,
Because he used his horn
When he oughta used his brake.

BROKEN VALVE-SPRING.

A rather good dodge for overcoming a broken valve-spring is to remove the lower half of the broken spring and place over the valve stem a large diameter washer; then replace the piece of spring, the end cap, and the pins, and the job is done. The washer prevents the two broken ends of the coil intermeshing.

THE OIL GAUGE.

The oil gauge is a visible means of notifying the driver that the oil pressure system is working efficiently and at the correct pressure, but it doesn't always indicate that there is sufficient oil in the sump. The dip rod should be resorted to periodically and sufficient oil kept for the perfect running of the engine. The driver who checks up on oil frequently will have more satisfaction in driving than the one who presumes that everything is alright because the car will run. It is these simple precautions that make for engine efficiency, safety and comfort.

STEM-GUMMING.

A valve fault which can prove troublesome is that of stem-gumming. This usually occurs in engines with badly worn cylinders, where considerable quantities of oil pass into the combustion heads, and having been burnt, are ejected with the exhaust. The result is that sticky carbon deposits are formed on the upper parts of the valve stems, and the increased diameter thus set up causes the valves to jam in their guides. They can be lifted readily by the tappets, but the springs may fail afterwards to force them back instantly to their seatings. This gives rise to considerable loss of power, together with the risk of burning the valve heads.

LEAKING RADIATOR CAPS.

Two things may cause a radiator cap to leak. Firstly, the cap washer may be worn and need replacing, which can easily be done by cutting a washer, the right size, out of an old piece of leather or rubber; secondly, it may be caused by a blockage in the overflow pipe. To check up on this, pass a piece of stiff wire down the pipe, and see if there is a free passage. If the rubber water pipe is old it may be found that it has become blocked up by the lining becoming perished, in which case a new pipe is required.

PETROL FROM PEAT.

News comes that Russia is experimenting with the subtraction of petrol from peat, and preliminary tests are reported to have shown satisfactory results.

The procedure is to treat the tar that is in peat by mechanical processes, which produce petrol, paraffin and such like by-products. One ton of peat is said to produce 7 per cent. of high-grade petrol, with 14 per cent. of distillation, which can be used in tractors and commercial vehicles, and 8 per cent. of paraffin by weight.

"LAZY" BRAKES.

This term very aptly describes an inefficient condition of the braking equipment of a car that cannot be ascribed merely to lack of periodical adjustment. It infers that although the brakes are more or less correctly adjusted, they do not respond as well as they should to pedal pressure.

One of the most frequent causes of "lazy" brakes is lack of lubrication of the many joints, bearings, etc., that make up the braking equipment. This lack of oil is particularly evident if the bearings of the cam operating shafts adjacent to the drums are dry. If brake bearings and joints are not continuously lubricated rust will soon develop, resulting in a sluggishness which becomes more and more pronounced.

On no account should "lazy" brakes be ignored, in the hope that they will regain their vitality; they are an indication of a definite fault, which may de-

M. V. POINT MOTORS (AUST.) PTY. LTD.

FOR BETTER USED CARS AND TRUCKS AT LOWER PRICES.

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velop suddenly if it is allowed to persist, and thus result in the brakes unexpectedly being found useless in an emergency. Be sure you take care of your "lazy" brakes and have them put into efficient order at once.

SMOKING AT PETROL PUMPS.

The restriction of smoking should not apply only to the attendant at the petrol pump, it is a reasonable responsibility of the driver as well, and should be recognised. The National Roads and Motorists' Association urges that motorists should refuse to be served by an attendant who is smoking when delivering petrol, but they might go farther, and urge drivers to observe the same precaution. Though accidents may be few at petrol stations, it is a poor argument that "nothing has happened yet," because the unexpected often happens. Drivers should be particularly careful if petrol leaks are discovered or if the sense of smell indicates some petrol trouble. Safety is better than sorrow at any time, and is not restricted to railway crossings.

BODY RUST.

Until motor bodies are made entirely of rustless steel, it will be necessary to watch out for almost indistinguishable rust spots, where the paint or lacquer has been chipped off. Like a wooden house, a car is not only benefited in appearance by proper painting, but its material is also preserved. A small rust perforation on a mudguard, valance, body panel or anywhere where rain may lodge, will soon eat a larger hole or weaken the metal. This often happens "out of sight," therefore a check should be made underneath such parts and the trouble rectified if accessible. Slipshod washing sometimes allows dirt to remain on the metal and to form a corrosive spot, which will spread. Such spots, when discovered, should be thoroughly cleaned and painted over.

IF THE WINDOW STICKS.

If you are lucky enough to drive a closed car, you may experience an occasional difficulty in raising or lowering your window. If it sticks, get a carpenter's lead pencil, and rub it up and down inside the channel in which the glass slides. This will allow enough graphite to adhere to the metal frame to allow the glass to slip freely.

In Good Order.

"How's your car running?"

"Not so good: I can't get her throttled down."

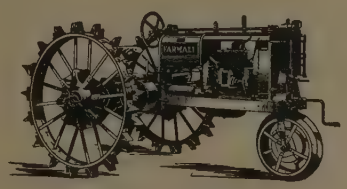
"How's your wife?"

"She's the same, thank you."

The most modern and most dependable Orchard Equipment

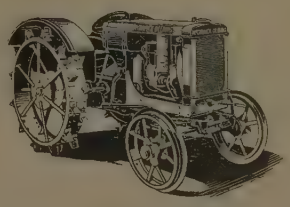
Quicker working, more economical and dependable in every way—these are the features of all the orchard equipment offered by International Harvester.

Every tractor and every machine is quality built, and each represents the very latest development in its field. Decide now to get full details on the equipment you need—see your local agent or write us for illustrated pamphlets.



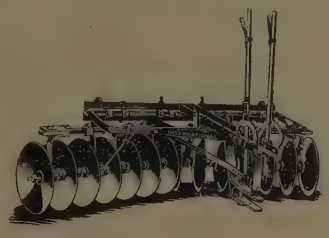
F-12 TRACTOR.

This is the McCormick-Deering Farmall-12, an ideal tractor for row-crop cultivation and general work. Turns in a 7-ft. radius. Also available — the Standard Farmall.



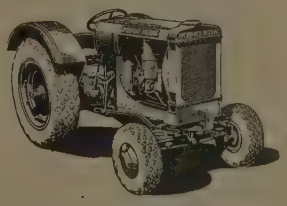
W-12 TRACTOR.

Here is the McCormick-Deering W-12 tractor—the new small tractor. Powered by a four cylinder valve-in-head engine, it operates on kerosene and can be put to many uses on the farm.



HARROWS.

Illustrated above is the International Model V, 14/18 tractor disc harrow, a well-designed, strongly-built harrow, ideal for orchard work. Gangs are reversible, and the discs can be set for in-throw or out-throw. Levers are within easy reach of the operator, and are so located that they will not come in contact with the trees.



O-12 TRACTOR.

This is a splendid tractor for the orchardist — the McCormick-Deering O-12. Low, short, and narrow—an ideal tractor for use wherever turning space is limited, or for working close to trees. Turning radius—8½ feet.

PLOUGHS.

Here is the International No. 7-B tractor orchard plough, a splendid plough for the orchardist. It is made in a 3-furrow size, and cuts a 9-inch furrow. Equipped with positive, quick-acting power-lift device.

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THE . . .

Market Grower

Items of Interest

Official Organ of the Market Gardeners and Fruitgrowers Society of Victoria.

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Also Official Organ of the Koondrook & Barham Tomato Growers' Association.

CABBAGE GRUB.

Measures for Control.

MARKET GARDENERS are reminded that Cabbage and Cauliflower crops frequently suffer serious damage from infestation by the caterpillar of the Cabbage moth unless timely combative measures are employed. Dusts of a very finely divided nature containing 50 per cent. or arsenate of lead give excellent control.

The dust should be applied by means of a dusting machine so as to obtain a fine film over the leaves. The dust is prepared by mixing lead arsenate powder with an equal quantity of "filler" or inert substance such as kaolin or hydrated lime. Proprietary lines of 50 per cent. lead arsenate dust are obtainable, but growers may mix their own. The greater efficiency of dusting as compared with wet spraying for Cabbage moth control depends to a large extent upon the fineness of the dust. Growers intending to mix their own dust should, therefore, be at pains to secure the finest grades of materials.

Dusting should commence in the seedbeds and be renewed two to three weeks after transplanting while the plants are still small and infestation is light. Two to four dressings, according to the degree of infestation, should be made before the plants commence to heart, when treatment with lead arsenate must cease.

The use of arsenicals must be discontinued six weeks from cutting owing to the danger of arsenate of lead poisoning to consumers. Nicotine dust (3½ per cent.) gives a measure of protection against the moth and may be used to check infestation on crops approaching maturity.

11,000 ACRES OF LETTUCE.

It is estimated that at present time there are 11,000 acres of Lettuce planted in the Imperial Valley, in California. Harvesting generally commences in the middle of December, but shipment is light until the middle of January, from which time until March, shipments increase steadily, providing that normal weather conditions prevail. With snow prevailing in the large cities of the Middle West and Eastern States, huge consignments are rushed East for the enormous markets provided by Chicago, New York and other large industrial cities.

ASPARAGUS FOR PROFIT.

Now is the Time for Preparing Beds.

THE METHODS for growing Asparagus were recently described in detail by Mr. E. E. Pescott, F.L.S., Senior Horticultural Instructor, Victorian Department of Agriculture.

The Asparagus is a native of the seashore, and thrives best in deep, rich, loamy soil heavily stored with strong organic manures. Too much attention cannot be paid to soil preparation. Heavy clay soils should be avoided. Where, however, soil has to be prepared for growing Asparagus on a commercial scale the soil should be ploughed deeply without bringing the subsoil to the surface, and it should also be subsoiled, particularly if the latter be not at all porous. A good covering of stable manure should then be given to the field; the grower would have to depend upon subsequent top dressings with artificial fertilisers to provide nutriment for the plants.

In preparing the beds, anything that will form plant food, or that will tend to open the soil may be utilised, such as sand, turf, wood ashes, soot, crushed bones, leaves, grass, straw seaweed in addition to the ordinary fowl cow, pig and horse manure.

Beds for Asparagus growing should be prepared in the autumn, so that the soil may be mellowed and sweetened. The planting time is from June to August.

In Victoria the principal Asparagus growing areas are at Geelong and in Gippsland.

The Wild Asparagus growing at Quantong and Horsham and Mildura is of commercial value.

Varieties include Conover's Collossal, Palmetto, Argenteuil Purple, and Deerings Mammoth. For canning purposes Conover's Collossal is preferred.

COMBINATION SPRAY FOR TOMATOES.

The N.S.W. Government gazette of December 1, 1934, contains the following information relating to Tomato spraying:

A combination spray of 4-4-40 homemade Bordeaux mixture to which 1 lb. of lead arsenate is added per 40 gallons is recommended for the control of late blight of Tomatoes as well as the Tomato caterpillar. If aphids are also prevalent, nicotine sulphate may be included in the mixture at the rate of half a pint to each 40 gallons.

Spraying is best done in the morning of fine days. If nicotine is included it will be most effective in the warmest part of the day. Fortnightly spraying is satisfactory under average conditions, but in some seasons it is necessary to spray more frequently on account of the prevalence of blight and "grubs."

SWEET POTATOES.

Cuttings Available in N.S.W.

It was recently announced by the Department of Agriculture in N.S.W. that cuttings of Sweet Potatoes were available on application to the Narara Viticultural Nursery, Gosford, N.S.W. The varieties included Wannop, Ashburn, Nancy Hall, Pierson, Porto Rico, Yellow Strasburg, Vineless, Southern Queen and Triumph.

"Plane" Brand Dusts

"Beauty" (Knapsack) Dusters
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Tomato Culture

Helpful Hints from South Australia.

TOMATO GROWING formed the subject of some helpful comments recently in a paper by Mr. R. Granit, of Cummins, South Australia, before the local branch of the South Australian Bureau of Agriculture. After describing the preparation of the soil and the handling of the seedlings, Mr. Granit gave the following hints:

Pruning and Training. The plants should be pruned by removing any side shoots that are sprouting, and the writer has had best results by pruning the plant to one single stem in its early life, and later allowing one or more to appear. In many instances growers are in the habit of driving one or more stakes into the ground, and then allowing the plants to climb the stakes vertically. The best results cannot be had from the above practice, because:—(1) The vertical flow of sap retards the fruit-bearing habit of the plant, and (2) the plants are subject to the strong winds which often destroy the flowers.

To encourage the fruit-bearing habit of the Tomato plant its growth should be trained horizontally as soon as possible, and it is usually done by having a trellis erected, but as the trellis requires material and labor, especially when it should be removed annually to fresh ground, very few go to the trouble of having a trellis erected.

A number of years ago the writer experimented with the following method of training the plants, which proved such a success that he is confident in recommending same to others. The method is as follows:—By cutting No. 10 galvanised fencing wire into lengths of 15 inches and bending 3 inches of one end to a loop. As soon as the plant has reached the height of 8 inches the wire is pushed into the ground with the loop over the plant, forcing the plant to bend over. The plant should be trained towards the east, because (1) of its natural tendency to go towards the morning sun; (2) because of the prevailing westerly winds in spring the training will be easier if directed towards the east.

As soon as the plants have made further growth the wire should be pulled out and placed further on the plant to keep same growing horizontally, also having a steadying effect on the plant. This must be repeated constantly during the growing periods. At the end of the season the wires should be collected and stored for the next year.

Watering. The district having a clay sub-soil, care should also be used in watering the plants, as excessive watering is applied in most cases. Of course, the weather is always a big factor, and should be taken into consideration, but, during summer when no rain has fallen a good watering once in every 10 or 14 days will give the best results.

Disease Control. Remove all affected fruit from the growing area, and thereby prevent undesirable spores from entering the earth.

A FRENCHMAN'S ACCOUNT OF ADAM'S FALL.

Ze Snake Say Madame Eve is Like a Goddess.

Monsieur Adam, he vake up—he sees une belle demoiselle in ze garden. Voile de la chance; "Bon jour, Madame Iv." Madame Iv, she vake: she hole her fan before to her face. Adam put on his eye-glass to admire ze tableau, and zey make von promenade. Madame Iv, she feel hungry. She see appel on ze arbre. Serpent se promensur l'arbre—make one walk on ze tree. "Monsieur le Serpent" says Iv, "vill you not have ze bonte to peek me some appel? j'ai faim." "Certainement, Madame Iv, charme de vous voir." "Hola mon ami ar-r-retez vous?" sat Adam—"stop! stop! que songez vous faire? Was madness is zees? You must not pick ze appel!" Ze snake, he take one pinch of shnuff, he say: "Au, Monsieur Adam, do you not know how zere is nossing proheebet ze ladies? Madame Iv permit me to offer you some of zeese fruit defendu—zeese forbidden fruit." Iv, she make one courtesy—ze snake, he fill her parasol wiz ze Appel. He says: "Monsieur Adam, he will eat ze Appel, he will become like on Dieu: know ze good and ze eveel—but you, Madame Iv, cannot become more of a goddess zan you are now." An' zat feenish Madame Iv.—Anonymous.

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Dear Sir,—Regarding the trial carried out this midsummer with your Acme Bean. I am pleased to be able to inform you that the Acme showed out to even greater advantage than in the spring trial, when the yield over Canadian Wonder was just 3 to 1 on the first picking.

Planted early in December, with Pale Dunn and Canadian Wonder, in rows 45 feet long, the Acme gave 12 lbs. of splendid quality pods on the first pick, while the other two varieties named each gave ½ a lb. of curled, unmarketable Beans. This may sound fabulous, but it is nevertheless a fact. It is difficult to raise Beans here in the midsummer. The Acme is easily the best summer Bean I have yet tried.

Yours faithfully, M.C.G.

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POULTRY NOTES

CHEAP FOWL HOUSES.

Cement Washed Bags.

For the farmer who has to equip his farm in the cheapest possible manner, there is nothing as economical as houses made out of sacking which is painted over with cement. We are all familiar with the whitewashed bag shed, which may be sufficient as a quick and temporary shelter for stock of all kinds, but experiments with cement instead of whitewash have proved that an almost indestructible house can be made by anybody having a minimum of building construction knowledge, at a very small cost.

In the construction, sawn uprights are used with a galvanised iron roof, although in smaller sheds even cement-washed bag roofs are found to be satisfactory, providing that a good fall is allowed. The sacks are carefully ripped open and tacked on to the frame with heavy clouts, say 5/8 in. in length. The joints or seams of the bags are made to lie as flat as possible, and a taut job is essential.

The cement paint is mixed as follows: —1½ gallons water, 12 lbs. cement, 2 lbs. powdered lime, 1 lb. salt and ½ lb. powdered alum. The salt and lime should be put through a fine sieve to get rid of any lumps and should be well mixed together. Now add the water, stirring slowly, then follow with the cement, stirring well into a thin paste. Finally add the alum, and the mixture is ready for use.

It can be applied with a stiff brush by painting it on the sacking, first on the outside and then on the inside. After the initial wetness has disappeared, but before the wall is completely dry, apply a second coat to the outside. When this second coat is dry the wall will be found to be quite taut and hard. Some further coats are an advantage. Naturally the more coats the wall receives, in reason, the more indestructible the wall will become. Six coats in all will make a perfect job, although the large brooder house mentioned above only received three coats in all.

Such houses are claimed to be vermin proof and entirely weather proof. In one case the farmer knocked a hole in a wall to allow his birds out on to a green-feed plot, but later wished to close the hole up. He did this by cementing a bag-patch over the hole, which not only effectively closed it but it was scarcely possible to tell where the hole had been. Another farmer built a cement-bag room on to his house, calcimined it nicely and made a very presentable room at a cost of less than £5 complete with a door and a window.

Pens constructed with cement-washed sacks.

The illustration shows a portable weaning shed on a grass plot, and an intensive shed in course of completion. In the latter case galvanised iron is used for the roof, everything else is cement painted sacking, except for the wire netting on the front section.

REMEMBER THAT:

Pullets should not be forced into egg production, they will last longer if their laying commences naturally.

Be sure to give them plenty of chaffed green feed.

Shade and fresh clean water must be plentifully provided during the hot weather.

Crowding is responsible for overheating at night, resulting in colds, see that the birds have enough perch room without overcrowding.

THE PIG PEN.

CLASSIFICATION OF PIGS.

The following is the approximate classification of pigs as observed in the trade:—

Trade Name.	Approx. Age. Weeks.
Suckers or sucking pigs	6
Weaners	8
Slips	10
Stores	12-14

A general classification of pork and lightweight bacon pigs would be as follows:—

Light porkers	4 months
Medium porkers	4½ months
Heavy porkers and light baconers	5 to 6 months

Approximate weights of the above are —Suckers or sucking pigs, 15 lb. dressed; weaners, 25 lb. to 30 lb. alive; slips, 30 lb. to 40 lb. alive; stores, 45 lb. alive; light porkers, 40 lb. to 50 lb. dressed; medium porkers, 60 lb. to 80 lb. dressed; heavy porkers and light baconers, 80 lb. to 90 lb. dressed.

FATTENING FOODS.

Pigs fatten well on Maize, but, unfortunately, it produces a soft bacon of inferior quality to that from pigs fed on other grains, and for this reason it should never constitute more than 50 per cent. of the grain ration, 35 per cent. is a more desirable proportion.

Barley is recognised as the best grain for fattening pigs. It produces pork and bacon of the first quality, and the fat produced is hard and white, being free from greasiness. Barley can be fed alone or with other grains.

Wheat is equal to barley in most fattening qualities, but has the disadvantage when ground of becoming doughy when moistened, and therefore should be only cracked for feeding to pigs. It has a protein value superior to Barley.

Peas, being rich in protein, should be used for balancing the ration, which contains grains of a high carbohydrate content. Fed alone, they will produce hard lean flesh, but young pigs do not thrive on Peas. No more than 25 to 30 per cent. of Peas should be included in the feed.

Skim-milk and butter-milk are both rich in essential mineral elements. They are specially recommended for pigs just weaned, being easily digested and containing between 3 and four per cent. protein. The milk should be pasteurised, however, to prevent the possibility of tuberculosis and should not be diluted by the wash water. Young pigs require larger proportions of milk to grain than do older pigs. About 1 gal. skim or butter-milk per day will balance a maize ration for pigs from weaning age to market weight.

rapid growth (say 90 to 130 lbs.) more milk may be profitably fed.

TROUGHS.

If sickness is to be avoided, unclean feeding vessels should be avoided. Much of the gastro-intestinal trouble in young pigs is caused by filthy feeding conditions. Iron, concrete or wood troughs may be used, but iron is probably preferable, and can be kept clean without much trouble. Uneaten food should be removed, and the trough cleaned before further food is given.

If concrete troughs are used, they should have a smooth surface, and be scoured out regularly. Sour milk has a destructive action on concrete, and will cause it to break up if any pits are allowed to appear, the lime and sand getting into the food.

If wood is used, it should be treated with tar or filling, so that the food will not soak into the wood. The trough slightly lower at the bung end will allow cleaning with little trouble, and can be scrubbed and washed out easily.

All troughs should be heavy enough, or fastened down, to prevent them being overturned, and so placed that the pigs cannot stand in them. Most infection from parasitical diseases comes through the mouth, and if the pig runs about in the excrement and carries it into the trough he may spread disease amongst the whole litter.

REARING COSTS.

In our December issue we pointed out that a 12 to 14-teat sow would rear her young more economically than a 10-teat sow, and give better service. Recent tests in England showed that when only eight pigs were reared by one sow in a year, they cost 30/- each to bring to the weaning age, but 20 pigs per sow per year were raised at a cost of only 12/- per pig.

This is a reasonable expectation, and clearly shows the necessity of weaning strong litters without losses. Naturally, it necessitates the mother being kept in top condition all the time, to accomplish which she must be fed carefully both before and after farrowing.

POINTS TO REMEMBER.

Keep the pig pens clean.

All pigs don't gain a pound a day.

Give the sow a drink of cool water immediately after farrowing.

If you can't talk to your sow as you would to your children, quit the pig-raising business.

It is better for the farrowing sow not to have anything but a drink for the first 24 hours.

The same amount of food will not always do for different sows; some give richer milk than do others. Some pigs will assimilate their food better than will others.

Bee-keeping for Beginners.

(By J. W. Thomlinson, Apiary Inspector, Dept. of Agriculture, Victoria.)

The production of honey in commercial quantities is essentially a rural occupation, and, to ensure a reasonable measure of success, the apiary must be located within an extensive area of nectar-secreting and pollen-bearing bloom. The need for nectar is obvious—without it, honey production is impossible. Just as important is a plentiful supply of pollen, which is required for the continuous rearing of the young bees, necessary to keep the colony at normal strength.

It must not be taken for granted that all flowers secrete or yield sufficient nectar to enable the bees to secure a surplus above that required for the existence of the colony. There are many plants that, while profuse in bloom, are of little or no value from a beekeeping point of view. It is only by experience, or by knowledge gained from those who have had the necessary experience, that the apairist is enabled to distinguish between bloom which may reasonably be expected to yield a profitable return and that which is practically worthless.

So far as Victoria is concerned true garden honey is not available in commercial quantities, though honey so described has led many an enthusiast in the suburban area to purchase expensive hives and equipment in anticipation of indulging in an interesting and profitable pastime. There may be a wealth of bloom in the numerous flower gardens surrounding the suburban home, and the bees may be seen busily working among the flowers, and continuously bringing in loads of pollen or bee-bread. Despite this, an examination of the combs within the hive will disclose that, in the great majority of cases, there is barely sufficient honey to provide food for the colony during the winter months. There are a few exceptions, however, and as much as 30 lb. of surplus honey has been taken during a season from a strong colony located within the suburban area. But such cases are rare, and, in almost every instance, investigation has shown that the bees have had access to Sugar Gums or, when the hives are located in a seaside suburb, to Coast Tea-tree (Leptospermum loevigatum). Actually we are indebted to the native Eucalypts for at least 95 per cent. of the 3,000,000 to 4,000,000 lb. of honey produced annually in Victoria.

Members of the Colony.

The Queen.—Under normal conditions in the spring a colony of bees will include three sorts, two of which are females and the other, males, or drones. Of the females, numbering possibly from 30,000 to 40,000, in one only, the queen or mother bee, have the sexual organs been fully developed.

The Workers.—Worker bees, which are familiar to all, form the main body of the colony. They are females, but with the sexual organs undeveloped. Though unable to reproduce their kind, they cheerfully accept full responsibility for the rearing of the family from the moment that the egg destined to produce the young larva is deposited by the queen.

As the name suggests, these bees do all the necessary labor of the colony. In addition to the rearing of the brood and wax production, this includes wax production, comb building, nectar and pollen gathering, water carrying, and ventilation and regulation of the inside temperature of the hive. During the winter, when there is little or no work to be done, the workers may live three or four months, or perhaps a little longer, but, during the busy season the average life is about six weeks.

The Drones.—In appearance, drone or male bees are larger and considerably broader than workers. They are reared during the spring and summer months, and even into late autumn, provided that there is a steady supply of nectar being gathered. Their sole function is the fertilising of the queen and, although tolerated indefinitely by queenless colonies, under normal conditions are allowed to exist only during times of prosperity. As the honey season draws to a close, and the supply of nectar diminishes, the destruction of the drones is decided on by the workers. Not being equipped with stings they can offer little resistance, and fall easy victims to their fierce opponents. Within a few days the massacre is complete, even to the sealed and unsealed larvae in the drone cells.

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MARKET NOTES.

VICTORIA.

Market Review for January

NO exceptional changes occurred during the past month, fluctuations were seasonal and steady. The supplies of stone varieties were heavy and, in the case of Peaches, caused prices to drop below reasonable expectation. On the whole, however, it can be reported as a steady month with fairly satisfactory prices ruling throughout.

Apricots were affected by early rains which caused supplies sent to market to be cracked and discolored, the canneries receiving the best samples.

Peaches.—Owing to climatic conditions favoring growth, brown rot was not as prevalent as last year, and supplies were heavy. The quality in general has been good, bettering during the last week, but prices dropped considerably to clear and avoid waste.

Plums have been plentiful, in fact almost a glut has occurred. Good quality desserts brought satisfactory prices, but on the whole prices were low.

Nectarines were only fairly plentiful, with good quality and firm prices, the demand being good considering the heavy supplies of other stone fruits.

Pears were badly marked up to the last week, and windfalls made their usual appearance. Some codlin moth was observed, although the quality should improve during February. Size is small, the canneries again getting the choicest supplies.

Apples.—A few William's Favorites and Gravensteins made their appearance and the demand and price was satisfactory.

Tomatoes.—Up to date the season for locals has been good. A little low in price in the last week, but steady, with good quality.

Berries are practically finished, though Currants are still being moved. The week-end shipments from Tasmania have, on the whole, been of second quality, with correspondingly low prices.

Bananas.—Supplies normal, demand good and prices a little lower than the period warranted.

Citrus. — Steady. Supplies normal. Grapefruit in small demand, size and keeping quality a little down. A few Californian clearances.

Grapes just coming in, at present mostly Sultanas. Grapes are getting later in recent years, due possibly to the wisdom of growers allowing them to sugar before picking. If no rains come in the next week or two there should be a good Grape market. The Senior Inspector of Fruit (Mr. E. Meeking) recently warned growers against sending immature Grapes for market, not only because of the regulations, but also to maintain the public demand, which would be affected if consumers were sold poor quality Grapes, especially in the early part of the season.

Pineapples quite normal. No heavy movement reported.

Passionfruit maintained a good average price, with demand about normal.

Victoria.

Melbourne (31/1/35).—Prices quoted by the Wholesale Fruit Merchants' Association were as follow:—Per case: Apples, eating 4/- to 8/-, special, higher; do., cooking 2/6 to 4/-. Bananas (double case), green, 8's and 9's, 10/- to 11/-, few higher; 6's and 7's, 7/- to 9/-; 7's, 6/- to 8/-. Cucumbers, 5/- to 6/- bush. case. Figs, 3/- to 5/- half case. Grapefruit, 7/- to 13/-; specially selected, 17/-. Lemons, 4/- to 8/-, special higher. Val., 4/- to 11/-, special higher. Nectarines, 4/- to 6/-. Passionfruit, 5/- to 7/- half case. Pears, W.B.C., ripe, 5/- to 6/-, special higher; small and faulty unsaleable. Pineapples, 8/- to 11/- double case, few higher, Papaws, 9/- to 12/- double case. Peaches, 3/- to 5/-, few higher; small and inferior unsaleable. Plums, 1/- to 3/-. Tomatoes, 2/6 to 5/-, special higher. Mangoes, to 10/-.

The Melbourne market manager of the Federal Citrus Council of Australia reports that sales were as follow:—Valencias, average standards, 75-84, 5/- to 6/-; 96-112, 6/6 to 7/-; 126-168, 8/-; 182, 7/-; 196, 6/6; 225, 6/-; 248, 5/-; 270, 4/-. Good M.I.A., to 9/-, best counts;

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selected standards, 7/- to 10/-, a few 11/-; specially selected, 8/- to 12/-, a few 13/-. Grapefruit, average standards, 60-75, 10/-; large, from 7/-; selected, to 11/- and 12/-, best counts; specially selected, to 13/-, a few to 17/-. Lemons, average standards, to 5/- and 6/-, best counts; a few specially selected, to 7/- and 8/-.

New South Wales.

Sydney (29/1/35). — The market representative of the Fruitgrowers' Federation of N.S.W., reports as follows:— Apples (standard and special): Carrington 4/- to 10/-, Cleos. 5/- to 8/-, Grav. 4/- to 11/- (few ex. special higher), G. Smith 5/- to 9/-, Lord Nelson 3/- to 7/6, Mobbs Codlin 3/- to 7/6, McIntosh Red 5/- to 12/-, Trivatt 4/- to 11/-. Pears: China 2/- to 4/-, Clapp's Favorite 3/- to 6/-, Williams 3/6 to 8/-. Supplies of Apples are larger and prices generally have receded. Colored fruit continues scarce, but cookers and "D" grade fruit are plentiful. **Pears:** Most Victorian arrivals of the Williams variety have been windfalls and have sold at from 4/- to 6/-. Apricots: N.S.W., Inland 3/- to 5/- half bush.; Vic. 5/- to 8/- bush.; Tas. 3/- to 5/- half case; Bananas, N.S.W. and Qld. 5/- to 11/- few 13/- trop. case. N.S.W. and Qld. deliveries for the past week totalled 13,758 cases, approximately 1,500 cases are expected from Fiji. Delivery of these last mentioned has been delayed due to the "Aorangi" being placed in quarantine. An over-supply of ripe fruit and 8 inch size resulted in very low prices from the 24th to 26th insts. Cape Gooseberries 2/6 to 3/6 quarter case; Lemons, 3/- to 14/- bush.; Vals. 3/6 to 9/- bush. Improved demand was experienced for Lemons early in the week and new season fruit is in request. Large sizes and the last of the 1934 main crop are unpopular. Vals.: Increased supplies of plain grade and inferior fruit made sales of anything but special fruit difficult. Figs: N.S.W. 3/- to 3/6, few to 5/- quarter. Grapes: N.S.W. Sweetwater 4/- to 5/6 half case; Black Muscat 8/- to 11/-, few 13/- half case; B. Hamburg 7/- to 9/- half case; Waltham Cross 6/- to 8/- half case. Supplies continue scarce. Mangoes: Apple, 12/- to 16/- bush.; Nectarines, N.S.W. 3/- to 5/-, few 7/- half case; Vic. 4/- to 7/-, few 9/- bush.; Passionfruit, N.S.W. 3/- to 5/-, few spec. to 8/-, and inferior lower per half.

Supplies are not excessive and special quality is scarce. Peaches: N.S.W., Elberta 5/- to 6/6 bush.; Shanghai and Blackburn 4/6 to 7/- half bush.; Vic. 3/- to 5/-, few to 8/- bush. This market was depressed during most of last week due to the low prices at which Vic. fruit was offered. Supplies continue plentiful. Golden Queen and Phillips Cling are arriving from the M.I.A. Plums: N.S.W. Most sales to 4/6 half; spec. Wickson and Narrabeen 4/6 to 7/-; Angelina 3/6 to 5/-, few 7/-, small from 2/-; Vic. Santa Rosa, Burbank, and Ballina 4/- to 8/- bush.; Angelina 6/- to 10/-; Tas. Angelina 3/- to 5/- half case. Angelina Plums from all sources continue small in size and large sizes of all Plums have been in request. Papaws 5/- to 9/-, few 10/- trop. case; Pineapples, Qld.: Ripley 4/- to 6/- trop. case; Queen 8/- to 10/-, few 11/-; Cucumbers, N.S.W.: Apple variety 6d. to 2/- half case; Long variety 2/- to 4/- bush.; Tomatoes, N.S.W. metropolitan 2/- to 4/-, spec. colored 5/- half; Vic. 7/- to 8/- bush.

Queensland.

Messrs. Robsons Pty. Ltd., Brisbane, report under date January 16, as follows:—

Apples: Local Stanthorpe eaters showing plenty of color are selling freely from 9/- to 12/-, hail-marked much less. Choice green Stanthorpe cookers selling well from 6/- to 8/-.

Oranges: Southern Oranges have been selling at firm rates during the past few weeks, but this week the market is easier, best sizes and quality selling to 10/-.

Lemons: These have been selling from 19/- to 20/-, but this week values for Lemons also, eased to 17/-.

Pineapples: Choice smooths are realising to 7/- and roughs to 7/6.

Stone Fruits: Choice local Peaches are selling to 7/-, Plums to 9/-, Nectarines to 8/-, and Apricots to 10/-.

Grapes: Good keeping local Muscatels realised to 6d. per lb. to-day.

Vegetables: All kinds are selling at reasonable rates, Beans to 6/- per 30 lbs., Peas to 11/- for the same quantity, Cabbage to 10/- per bag.

Hail storms have caused considerable damage to some of the crops in the Stanthorpe district, and in view of this, some of the consignments coming forward are badly hail-marked.

Brisbane (25/1/35).—Bananas (cases) Cavendish: Eumundi, JR 9/- and 7/6, CEL 8/- to 6/3, K & K 7/- to 5/9, DH 7/- and 6/6, CC 6/9 and 5/6. Mooloolah, CH 7/9 to 7/-, VFP 6/6 and 6/-, NC 6/6 to 5/6. Cooran, RR 8/6 to 6/9. West Burleigh, WJK 8/- to 6/6. Gympie, AS 8/- to 6/3, HW 6/9 and 6/-; Buderim, EMW 7/9 to 6/6; Nambour, JE 7/3 and 7/-, AM 6/- and 5/3; Palmwoods, JW 7/- to 5/6, DT 6/3; Landsborough, SFG 7/- to 5/6; Pomona, LTC 7/- to 4/6; Closeburn, HY 6/9 and 6/-, MT 6/- to 5/6; D'Aguilar, ND 6/- to 5/-; Brookfield, PJS 5/9 to 4/6; Peachester, EG 5/-; Yandina, FP 3/- bush. case; Buderim, EMW 3/3. Case Lady Fingers: Palmwoods, BCR 9/3. Pineapples: Smoothleaf, cases, 3/- to 6/-; Ripleys 4/- to 6/-; Lemons 10/- to 16/-; Oranges 5/- to 11/-; Peaches 1/- to 3/-, special Elberta 4/-; Nectarines 1/- to 4/- half bush. case; Stanthorpe cooking Apples 3/ to 8/- bush. case; GS 8/- to 10/-, Grav. 3/- to 10/-, Jon. and Del. 6/- to 12/-, others 2/- to 7/-; Pears 2/- to 8/- bush. case; Plums, special 7/- to 10/-, others 2/6 to 6/-; Passionfruit 3/- to 6/-, few 7/-; Mangoes 3/- to 7/- case, special higher. Grapes: Coominya 6/-, Roma Muscatels 10/- to 12/-, Black Prince and Royal Ascot 6/- to 8/-, Waltham Cross 12/- to 15/-; Papaws 2/- to 3/6 bush. case, special 4/6. Imported fruit: Plums, Angelina 9/- to 10/-, others 3/- to 7/-; Vic., Lemons 9/- to 15/-.

Western Australia.

Perth (23/1/35).—Apples, Jon. flats, 3/6 to 4/6 (special to 7/-); Cleo. 2/6 to 5/- (special to 6/-); Dunn's Seedling 4/- to 5/-; Citrus: Vals. flats 6/- to 11/6 (special to 12/6); dumps 6/- to 16/6 (special to 17/-); Lemons, flats 5/- to

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CITY FRUIT MARKETS, SYDNEY

12/- (special to 13/6, others from 4/-); Apricots, flats 4/- to 9/6 (special to 11/-); Peaches 6/- to 12/9 (prime to 16/-); Nectarines 4/6 to 10/6 (special to 14/-); Plums: Shiro 3/- to 5/9; Satsuma 4/- to 8/6 (special to 9/-); Wickson 3/- to 8/- (special to 9/6); Burbank 2/6 to 7/- (special to 8/-); Santa Rosa 4/- to 9/- (special to 10/-); other lines 5/- to 9/-. Pears: Bartlett, flats 3/- to 5/- (special to 7/6); other varieties 2/- to 4/-; Grapes, open, white 2/- to 4/6 (special to 5/6); closed 2/- to 4/-; colored 3/- to 9/-; Tomatoes 1/- to 5/- (special to 6/-); Passionfruit 3/6 to 7/-; Strawberries 4/- to 12/-.

South Australia.

Adelaide (25/1/35).—Apples (eating) 4/- to 8/- case; do. (cooking) 3/- to 4/-; Apricots 7/-; Bananas (Qld.) 6/- to 12/-; Lemons 8/- to 10/-; Nectarines 5/- to 10/-; Oranges (Common) 8/-; do. (Navel) 13/-; Peaches 4/- to 8/-; Pears (eating) 7/-; Pineapples 10/- to 12/-; Plums (light) 3/- to 4/-; do. (dark), 3/- to 5/-.

New Zealand.

Dunedin. — Messrs. Reilly's Central Produce Mart Ltd. report under date January 17, as follows:—Reduced consignments of stone fruits arriving meeting a keener remand, prices advancing for all stone fruit free of rot. Raspberries also advanced in prices, realising as high as 7/6 bucket. Large consignments of Apples coming to hand. Unfortunately a number developing pit and buyers are shy and prices low. Some choice Bon Chretien Pears arrived from Hawkes Bay realising good values. Some growers advise that they are now consigning their last lots of Apricots for the season. A special line of Plums from Otago Central realised 6d. per lb.

Choice cultivated Blackberries coming to the market are in keen demand. Choice button Mushrooms are wanted. Large quantities of Tomatoes arriving resulting in lower prices all round and unpayable to Nelson and Hawkes Bay consignors, prices hardly paying freight charges.

There is a good demand for vegetables of all descriptions.

Prices: bushel and American cases: Apples, new seasons Grav. 4/-, 7/-; Jamaican Oranges 40/-; Pears, W.B.C. 12/6; Cal. Oranges 42/6; Grapefruit 37/6; Bananas, ripe Niues 25/-; Cal. Lemons 52/-, N.Z. Lemons, 1st grade, 12/-; Pineapples, 14/-, 16/-. Half cases:

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Cherry Plums, 1/6, 2/6; Grav. Apples, 2/6 to 4/-; Peaches 2/-, 3/6; Apricots, 2/-, 3/6; Cucumbers, 2/-, 3/-; Nelson Tomatoes, 2/- to 3/6; Moorparks, 2/9, 5/3; Jargonelle Pears, 2/6, 3/-.

FRUIT FOR MANCHESTER.

Capt. W. J. Wade, of Sydney, representative in Australia for the Manchester Ship Canal Company, advises that the following steamers are taking refrigerated and general cargo for Manchester: "Clan Urquhart," loading Brisbane, February 15, Sydney February 26, Hobart March 2, Melbourne March 7, and Fremantle March 13; "City of Winchester," loading Brisbane April 1, Sydney 9th, Melbourne 17th, and Adelaide 22nd; "Berwickshire," loading Brisbane May 11, Sydney 16th, Melbourne 18th, Fremantle 25th.

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FOREIGN FRUIT NOTES.

South Africa reports that their first shipment of Oranges to Canada in November were sold at good prices. Regular shipments will follow for the next three months and a total of 100,000 cases for the season is expected.

During March-May, 1935, South Africa expects to export deciduous fruit to Canada.

In November, Canada accepted a consignment of 5,000 cases of Oranges from Jamaica, which was quoted as a record shipment. Under arrangement, the fruit was wrapped in labels supplied by Canada and packed in Canadian-made cases. The Oranges were shipped on a Canadian steamer.

Reports from Florida (U.S.A.) state that the Orange season was estimated to be 83 per cent. of normal on November 1, slightly higher than the previous month and 12 per cent. better than in November, 1933. Grapefruit, 80, 79 and 62 per cent. respectively, also shows an improvement over last year. The outlook for the season covered by the reports gave the expectation of 25 per cent. over 1932 in the total citrus crops.

Japan's 1934 Soy Bean crop was much lower than that of 1933, with exports proportionately decreased. The average production per year over the past four years was 100,989 tons, of which 1933 harvested 122,208 tons, and 1934 only 84,618 tons. In 1933 exports of Beans amounted to only 49 per cent. of the crop, which was a much lower percentage than that of several preceding recent seasons.

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Successful Inaugural Meeting.

THE INAUGURAL MEETING of the Victoria Mark Fruit Co. Ltd. was held on January 4 at the Board Room, Commercial Travellers' Association, Melbourne. There was a large attendance, including fruitgrowers, wholesalers and retailers. Much enthusiasm was displayed, and this augurs well for the success of the movement.

Mr. W. A. Thiele, who presided, detailed the history of the progress to date: district councils were being formed in various parts of the State.

Mr. W. H. Everard, Speaker of the Legislative Assembly, in declaring the company open for business, said other countries had been faced with the problem of raising the reputation of its fruits, and had overcome it by standardisation. An organisation like this, by putting a good product on the market, would have its mark label recognised by the public, and could extend its markets. If the public realised it could rely on the quality of the fruit offered for sale there would be greater consumption. He hoped it would prove a new era for the growers, and felt that the Government would assist the organisation.

The following were elected directors:—Messrs. W. A. Thiele, W. B. D. Jarman, G. C. Karnaghan and W. P. Mair (growers), E. W. Thompson (retailers), F. Cave and J. R. Vail (wholesalers).

Representatives of the wholesalers and retailers promised the support of their sections of the trade in everything that could be done to improve the quality of the fruit placed on the market.

Mr. G. C. Karnaghan refered to the possibilities of processing fruit for Apple juices, cider and dried Apples and Pears as a means of preventing a glut on the market. He said these matters were receiving the consideration of the board.

Mr. F. G. Beet urged the Agricultural Department to insist on the regulations being carried out in their entirety, and said this was the only way to maintain a high standard of quality. There was too much fruit going on the market which should go into the pig pens.

Mr. E. Meeking, Senior Fruit Inspector, Department of Agriculture, said the only way by which the status of the industry could be raised was by standardisation. The department was glad to see the industry was making an effort in this direction. The department would enforce the regulations as far as was in its power. Marketing was not the primary function of the department. Its efforts were in the direction of research work. By standardisation the industry would secure the confidence of housewives and the public generally, thus would the consumption of fruit show a considerable increase.

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CANNED FRUIT EXPORTS.

The new regulations just gazetted provide that canned fruits shall have the season of packing marked on the tin, the marking to be made before the commodity is sent out of the country after being passed as suitable for export. Second-class products must be marked "Empire produce" instead of "Australian,' as formerly.

Victorian Fruit Marketing Association

THE monthly meeting of the Executive of the Victorian Fruit Marketing Association was held at the Board Room, Commercial Travellers' Association, Melbourne, on Friday, January 11, 1935.

Present: There were present Messrs. G. W. Brown (president), W. H. Carne and A. S. Harrison (vice-presidents), J. B. Mills, G. Douglas, K. Eagle, J. W. Bailey, F. Moore, F. R. Mellor, W. P. Hutchinson, F. Cave and the Secretary, R. E. Boardman; also Messrs. J. M. Ward, F. M. Read, and E. Meeking, Department of Agriculture. Mr. E. V. Ellis, of Rokeby, attended as a visitor, and was welcomed.

Apologies were received from Messrs. C. H. Jost and J. J. Tully.

Trade With Canada: The chairman stated there had apparently been a misapprehension as to the duty on Apples entering Australia. The correct figures were 6/- per cental duty foreign; 3/- British preference. As regards Canada, there was a separate trade agreement between that country and Australia, in which, however, Apples were not mentioned. The duty on Apples could be altered at any time by mutual agreement.

Advertising Fruit in U.K.: The chairman said that Mr. A. E. Hyland, Director of Trade Publicity in London, would be in Melbourne soon. It was decided on the motion of Messrs. Harrison and Moore to arrange for Mr. Hyland to address a meeting and for an invitation to be extended to all members to attend.

Apple and Pear Export Council: Mr. J. B. Mills reported that a meeting of the Executive of the Australian Apple and Pear Export Council had been held at Melbourne on December 17 and 18. Among the matters dealt with were the following:—

(1). **Pest Control:** The request from the V.F.M.A. for an annual grant for horticultural research was not viewed favorably by interstate delegates. As regards the £100 for thrips investigation, this sum had been voted by the full Council, and the Executive considered they had no power to increase it. The matter could be brought forward again at the next Council meeting. With regard to pest and disease control generally, it was felt that this was a Governmental matter. The N.S.W. delegates had complained that £2,000 of the money collected from the growers by way of orchard tax had been retained by the Department for the payment of their officers in pest control work.

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(2). **Trade With Germany:** A delegation from the Australian Apple and Pear Export Council had waited on the Assistant Minister in Charge of Trade Treaties, Sir Henry Gullett, who, while expressing sympathy with the objective, pointed out the difficulty in arriving at a basis for finance covering the various commodities. This situation was being thoroughly examined. Schedules of imports and exports were being studied to see what could be accepted from Germany in return for our Australian primary products. The situation was not hopeful, but the Minister had refused to be despondent on the subject.

(3). **Compensation for Re-Working Fruit Trees:** The Council had given much thoughtful consideration, but had been unable to arrive at a basis for compensation for re-working trees. In Tasmania the State Government had given assistance under certain relief measures. Delegates were of the opinion that this was a State matter and should be dealt with in such States as were materially affected.

Mr. Brown stated that the Australian Government had offered credit facilities to the German Government, but the latter was unwilling to accept the credits, their view—quite a reasonable one—being that such credit was in the nature of an external debt which had to be liquidated sometime or other. Consideration was being given to the pooling of orders for potash manures from Germany, also as to the supplying of wrapping papers, cases, and motor cars from that country. Credits, however, were not wanted—only reciprocal trade.

Mr. Moore urged that as growers were prohibited from exporting certain varieties owing to Commonwealth action, the matter of compensation was definitely a Commonwealth matter.

Mr. Mills stated that information regarding the Tasmanian activities with regard to re-working would be available on request, and he moved:—

"That a letter be sent to Mr. H. A. Court, Tasmania, requesting full details."

Mr. Hutchinson seconded. Carried.

Conference of Fruitgrowers: The secretary read a letter from J. G. Aird, stating that the Committee appointed by a conference of Victorian fruitgrowers had met from time to time and had now adjourned until April to observe the operation (1) of the amended constitution of the V.F.M.A., and (2) the activities of the Victoria Mark Scheme. Further, Mr. Aird had tendered his resignation as Secretary to the Committee.

Mr. Hutchinson stated that he had been appointed at a previous meeting, and he also desired to resign from being a delegate.

Mr. Moore said a committee had been appointed at a big meeting of growers held at Box Hill, and the committee then appointed had convened a further meeting of growers' associations which had been charged with the duty of arranging proper voting power, etc., and this committee had now met and adjourned.

Letter received. No action taken.

Field Day at Doncaster: Letter received from Southern Fruitgrowers' Association, notifying field day to demonstrate black spot investigations at Mr. O. A. Leber's orchard at East Doncaster, **on Thursday, January 17, at 2.30 p.m.: all interested invited to attend.**

Mr. Moore stated that black spot experiments on Pears had been very successful.

Mr. Hutchinson urged the importance of research into black spot on Apples. Research work was being conducted by the Department re codlin moth, but the black spot was infinitely worse. He moved:—

"That this Association request the Department of Agriculture to carry out black spot experiments for Apples in the different districts on similar

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Correspondence is invited by the Association.

Office : 21 Wholesale Fruit Market, Queen Street, Melbourne. Phone F 4866.

lines to the experiments for codlin moth control."

Mr. Douglas seconded. Carried.

Dr. Callan, Imperial Chemical Industries: The chairman introduced Mr. J. S. Wilson and Dr. Callan representing Imperial Chemical Industries.

Mr. Wilson stated that Dr. Callan was a member of the Committee in England which was studying pest and disease control problems. Dr. Callan had been invited to come to Australia to consider the pest and disease control programme as affecting Australian conditions.

Dr. Callan stated that whereas there was much scientific work going on in the world by entomologists and mycologists, the methods of control had finally to be dealt with by chemists. Chemistry as applied to pest and disease control had not progressed as in other walks of life. So far the control methods were based on copper and sulphur. Imperial Chemical Industries had set out on a research programme to find entirely new products for pest control. Experiments were being made with derris and pyrethrum. Advances had been made in the gas method for storing fruit, now a new fumigant had been discovered for getting rid of dried fruit grubs. The product had been tested out over three years and it was found that temperature was an important factor.

Imperial Chemical Industries, continued Dr. Callan, had taken a long view and was prepared to develop its policy over the years.

Regarding thrips, a synthetic rototone was apparently desired. Nicotine had proved useful. One weakness in the past had been its volatility, now a stable non-volatile nicotine had been evolved which had all the killing properties of the ordinary nicotine. The value of research was demonstrated in the discovery of a compound which checked the mildew spores in Manchester cotton export to the tropics. For tomato spot and mildew on vines a chemical product "Shirlan" had been discovered. Shirlan plus copper was probably useful for control of brown rot on Peaches.

Mr. J. M. Ward, Superintendent of Horticulture said that two lines of research work were needed:—(1) For citrus red scale; (2) non-arsenical spray for Apples and Pears.

The chairman said that the Thrips Investigation League had been created by means of contributions from growers, commercial interests connected with the industry, shipping companies, etc. It would be appreciated if the Imperial Chemical Industries could assist with this important work.

Mr. F. M. Read, Department of Agriculture, said that the products of the Imperial Chemical Industries were favorably known. The research work of the Department of Agriculture was hampered by shortage of staff and lack of funds. Research work was needed into control methods for the Oriental Peach moth. There should be more horticultural research stations in Victoria.

Mr. Moore said that the Department of Agriculture had able scientists and good work was being done despite shortage of staff. It was important that chemical compounds developed elsewhere should be tested under local conditions in Australia.

Dr. Callan and Mr. Wilson were cordially thanked by the chairman for their attendance and helpful remarks.

New Member: Application for membership from Mr. J. H. Lang, Harcourt, was accepted on the motion of Messrs. Eagle and Bailey.

Victoria Mark: Mr. Bailey raised the question as to the policing of the standards under the Victoria Mark System.

Mr. Brown said that the National Mark System in England was on a huge scale and was operated under the auspices of the Department of Agriculture, and the standards set were policed by the Departmental officers. He said that Victorian growers who sold their windfall fruit at 6d. a case made a huge error. By so doing they were spoiling the sale of good fruit.

Mr. Ward said that export standards were practically the same as for local trade, and any case marked with these grades should contain fruit of the defined quality, otherwise the person offering same for sale was liable for prosecution. Departmental Inspectors were present not only at the main markets, but also in country towns.

Mr. Moore spoke of the necessity for adequate inspection and quoted experiences with the Southern Pear Co.

Mr. Cave said the Victoria Mark Fruit Co. was not organised for trade, but was really an organisation of growers, wholesalers and retailers formed to promote standardised fruit and to advertise to increase fruit consumption. Apart from the inspection by officers of the Department of Agriculture the company would have its own inspector or inspectors. Other goods in commerce were standardised, why not fruit? This did not debar any grower from selling any fruit which would pass the ordinary Government standards, but only fruit which reached the export standards could be packed under the Victoria Mark and bear the Victoria Mark label. A board of directors representing all sections of the industry had been elected. An advisory committee had been formed among the growers in the different districts. The Victoria Mark Co. was really an outgrowth of the V.F.M.A., and was formed to deal with local marketing just as the V.F.M.A. was for export.

Mr. Cave answered questions of detail regarding the operations of the Victoria Mark Fruit Co.

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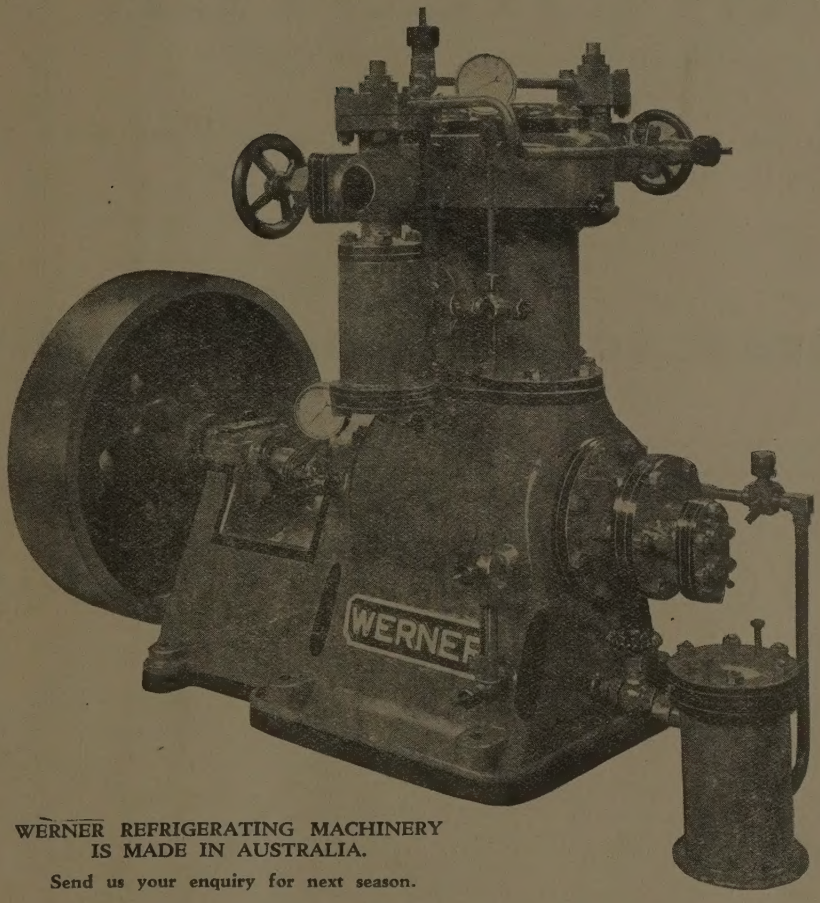

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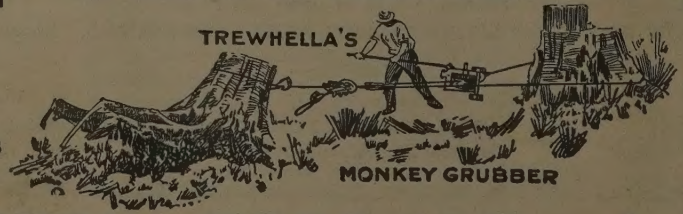

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